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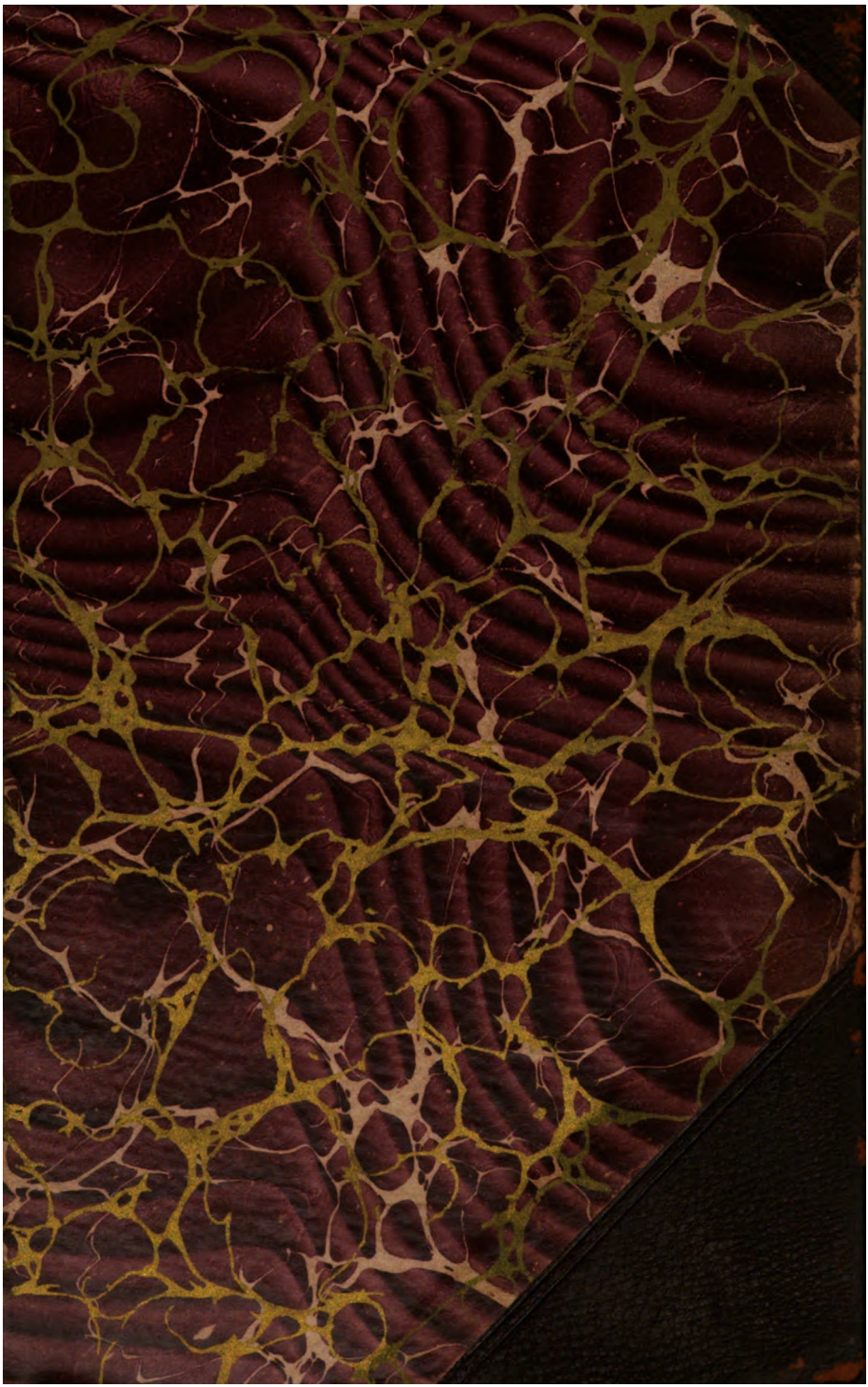

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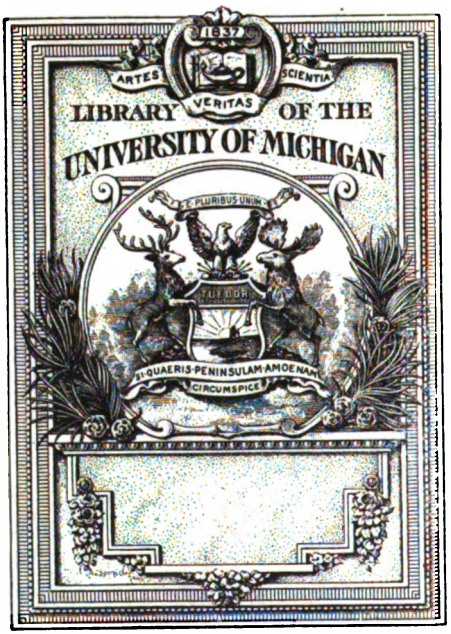

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THE

NAUTICAL ALMANAC

AND

ASTRONOMICAL EPHEMERIS

FOR THE YEAR

1861,

TO WHICH IS ADDED

A SUPPLEMENT,

CONTAINING EPHEMERIDES

OF

CERES, PALLAS, JUNO, VESTA,

MOST OF THE NEWLY DISCOVERED MINOR PLANETS,

AND

NEPTUNE,

FOR THE YEAR 1858.

PUBLISHED BY ORDER OF

THE LORDS COMMISSIONERS OF THE ADMIRALTY.

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ALPHABETICALLY ARRANGED.

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PREFACE.

THE contents of the NAUTICAL ALMANAC and ASTRONOMICAL EPHEMERIS for the year 1861 are the same generally as those of the preceding year.

An Ephemeris of Neptune is now added to the Ephemerides of the other Planets.

At the suggestion of the ASTRONOMER ROYAL, his Day Numbers for the correction of the Places of the Fixed Stars are now given, and the Planetary Ephemerides at Transit, with the exception of those of Mercury and Venus, restricted to about the following limits :—

Mars, Jupiter, and Saturn : From Transit at 20^h to Transit at 4^h.

Uranus and Neptune : From Transit at 15^h to Transit at 4^h.

Ceres, Pallas, Juno, and Vesta : From Transit at 15^h to Transit at 6^h.

The space thus placed at disposal for other additions which the increasing requirements of Astronomy may render desirable, has been augmented by printing the Transit Ephemerides in smaller type, which allows the Right Ascensions and Declinations on intermediate days, to be inserted midway between those on the other days, in a separate column. This commodious arrangement was also recommended by the ASTRONOMER ROYAL.

The contents of the Supplement are stated in page 539.

The Sun's Longitude from the *Mean* Equinox, the Latitude, and the Earth's Radius Vector have been deduced from CARLINI's Tables appended to *Effemeridi Astronomiche di Milano per l'Anno* 1833, (Milano, 1832,) using a difference of Meridians of $36^m\ 45^s$.

The Longitude, Radius Vector, and Latitude have been computed accurately from the Tables for the Mean Noon of every 2nd day of the year, and interpolated with second differences for each day.

The Nutations of the Obliquity of the Ecliptic ($\Delta\omega$) and of Longitude (Δ L), have been computed according to the following formulæ :

$$\Delta\omega = \quad 9''\cdot2236\cos\Omega - 0''\cdot0895\cos 2\Omega + 0''\cdot5507\cos 2\odot$$

$$\Delta L = -17''\cdot2524\sin\Omega + 0''\cdot2063\sin 2\Omega - 1''\cdot2691\sin 2\odot$$

where Ω is the Mean Longitude of the Moon's ascending Node, and $\odot$ the true Longitude of the Sun. The coefficients are those of Professor PETERS.*

* The terms depending on $2\mathbb{C}$ have been omitted.

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The Mean Obliquity of the Ecliptic has been taken = 23° 27′ 26″·92, on January 1, 1861, and the Mean Annual diminution = 0″·457. (BESSEL's *Tab. Reg.* page 9.)

The Sun's Right Ascension and Declination were computed independently for the Mean Noon of every second day, and interpolated for each day with second differences.

The Semidiameter of the Sun at the Earth's Mean Distance = 16′ 1″·82, being the result of the 12 years' Observations, 1836 to 1847, made at the Royal Observatory, at Greenwich.

The Equatorial Horizontal Parallax of the Sun, at the Earth's Mean Distance has been taken = 8″·5776, as deduced by Professor ENCKE, from the Transits of Venus in 1761 and 1769. (*Der Venusdurchgang von* 1769, &c. Gotha, 1824. page 108.)

The Constant of Aberration = 20″·4451. (*Struve, Sur le coefficient Constant de l'Aberration, p.* 47.)

The Sidereal Time at Mean Noon = $\frac{\text{Sun's Mean Longitude + Nutation.}}{15}$

According to BESSEL (*Tab. Reg.* page XXIV), the Mean Longitude of the Sun, at Paris Mean Noon of January 0^d of the year 1800 + t, is

$$279° 54′ 1″·36 + t.\,27″·605844 + t^2.\,0″·0001221805 - f.\,14′\,47″·083,$$

where f denotes, *for the 19th century*, the number of years from the year immediately preceding 1800 + t, which is divisible by 4 without a remainder. Assuming the meridian of Greenwich to be 9^m 20^s·63 West of that of Paris, and altering the epoch to the Mean Noon of January 1 of the year 1800 + t, the Sun's Mean Longitude (M) for the meridian of Greenwich is hence found equal to

$$280° 53′ 32″·71 + t.\,27″·605844 + t^2.\,0″·0001221805 - f.\,14′\,47″·083,$$

and we have, for the Mean Noon of any day (n) of the year 1800 + t,

$$\text{Sidereal Time} = \frac{M}{15} + n.\ 3^m\,56^s·555348 + \text{Nutation in R.A.}$$

The Sun's Geocentric Co-ordinates have been computed from the following formulæ:

$$X = R \cos \odot$$
$$Y = R \sin \odot \cos \omega$$
$$Z = R \sin \odot \sin \omega = Y \tan \omega$$

in which R represents the Radius Vector of the Earth, $\odot$ the Sun's *true* Longitude from the *true* Equinox, and ω the apparent obliquity of the Ecliptic. The Reductions to the Mean Equinox of January 1 have been obtained from similar formulæ; only using the Sun's Longitude from the Mean Equinox and the mean obliquity of the Ecliptic of January 1, 1861.

The Longitude of the Moon from the *Mean Equinox*, and the Latitude, have been derived from BURCKHARDT's "*Tables de la Lune*" (Paris, 1812), using a difference of Meridians = 9^m 21^s: The arguments of the 32 minor equations of Longitude have been taken from the Tables for each *tenth* Noon, and interpolated for every Noon by the continued addition of one-tenth of the difference, retaining throughout an

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additional figure; and the arguments of the other equations have been taken from the Tables for each *fifth* Noon, and in a similar manner interpolated for every Noon and Midnight: with the arguments so formed, the 32 minor equations have been computed for every Mean Noon, their sums interpolated for every Midnight with fourth differences, and the remaining portion of the computation of the Longitude and Latitude performed independently for every Mean Noon and Midnight of the Year; second differences having been taken into account wherever the irregular variation of the Equations rendered such a correction appreciable. The Longitude has then been reduced to the True Equinox, and the results differenced to the fourth order, and carefully examined. Wherever the progression of the fourth differences indicated a probable error of more than $0''\cdot5$ the computations have been re-examined.

The Horizontal Parallax of the Moon has been obtained from Mr. ADAMS's Tables in the Appendix to the NAUTICAL ALMANAC for 1856, and the Semidiameter by assuming $0\cdot273114$ as its ratio to the Horizontal Parallax, that being the value which Mr. ADAMS considers will nearly satisfy observation.

The Right Ascensions and Declinations have been computed for each noon and midnight, examined by means of differences to the fourth order, and interpolated for every hour. From these have been deduced the Right Ascensions and Declinations at Transit on each day of the year.

The Lunar Distances from the Sun have been computed from Longitudes and Latitudes for every six hours, examined by means of differences to the second order, and interpolated for every three hours. Those from the Planets and Stars have been computed from Right Ascensions and Declinations for every six hours, examined by means of differences to the second, third, and sometimes fourth order, according to the irregularity of their variation, and interpolated for every three hours.

The Places of Mercury, Venus, and Mars, *from the Mean Equinox*, have been derived from LINDENAU's Tables,* assuming Greenwich to be $42^m\ 56^s$ West of Seeberg; and those of Jupiter, Saturn, and Uranus, from BOUVARD's new Tables,† with a difference of meridians of $9^m\ 21^s\cdot5$; substituting only for Table XLII of Saturn, MR. ADAMS's correct Table given in the NAUTICAL ALMANAC for 1851, page xiv. The Places of Neptune are from KOWALSKI's Tables.‡

* Investigatio nova Orbitæ a Mercurio circa Solem descriptæ, accedunt Tabulæ Planetæ ex Elementis recens repertis et Theoria Gravitatis Illust. De Laplace constructæ. Auctore BERNHARDO DE LINDENAU. Gothæ, 1813. 4to.

Tabulæ Veneris novæ et correctæ ex Theoria Gravitatis clarissimi De Laplace et ex Observationibus recentissimis in specula Astronomica Seebergensi habitis erutæ. Auctore BERNHARDO DE LINDENAU. Gothæ, 1810. 4to.

Tabulæ Martis novæ et correctæ ex Theoria Gravitatis clarissimi De Laplace et ex Observationibus recentissimis erutæ. Auctore BERNHARDO DE LINDENAU. Eisenberg, 1811. 4to.

† Tables Astronomiques publiées par le Bureau des Longitudes de France, contenant les Tables de Jupiter, de Saturne et d'Uranus, construites d'après la Théorie de la Mécanique Céleste: par M. A. BOUVARD. Paris, 1821. 4to.

‡ Recherches sur les Mouvements de Neptune suivies des Tables de cette Planète, par M. KOWALSKI. Kasan, 1855, octavo.

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For Mercury, the Perturbations were obtained immediately from the Tables for each alternate Mean Noon, and interpolated with first differences; the remainder of the calculations was performed independently for every Mean Noon.

For Venus, the Heliocentric Longitude from the *True Equinox*, Latitude and Radius Vector, were computed independently for Mean Noon of every eighth day, then interpolated with fourth differences for each day. The Geocentric places were computed for every fourth day, and the intermediate values obtained by interpolating with fourth differences.

For Mars, the Heliocentric Longitude from the *True Equinox*, Latitude and Radius Vector, were obtained independently for Mean Noon of every twelfth day, and interpolated with fourth differences for each day. The Geocentric places were computed for every sixth day, and interpolated with fourth differences.

For Jupiter, Saturn, and Uranus, the Heliocentric Longitude from the *True Equinox*, Latitude and Radius Vector, were computed for Mean Noon at intervals of thirty days, and interpolated, for each day, with second differences. The Geocentric places were obtained independently for every sixth day, and interpolated for every day, using differences to the fourth order.

For Neptune, the Heliocentric Places were computed at intervals of thirty-two days, and Geocentric ones at intervals of eight days, and interpolated with second differences.

The Semidiameters of the Planets, at the Mean Distance of the Earth from the Sun, have been adopted as follow:

Mercury,	Eq. Sem.	3″·23	(Lindenau's *Tables of Mercury*, page 38).
Venus,	Eq. Sem.	8·25	(Delambre's *Astronomy*, vol. ii. page 620).
Mars,	Eq. Sem.	4·435	(Littrow's *Astronomy*, vol. ii. page 389).
Jupiter,	Eq. Sem.	99·704	(*Mem. Ast. Soc.*, vol. iii. page 301).
Saturn,	Eq. Sem.	81·106	(*Ast. Nach.* No. 189).
Uranus,	Eq. Sem.	37·25	(Delambre's *Astronomy*, vol. ii. page 620).

For Jupiter and Saturn, Polar Sem. = Eq. Sem. × ·927.

The Eclipses of Jupiter's Satellites have been computed from "*Tables Ecliptiques des Satellites de Jupiter, d'après la théorie de leurs attractions mutuelles et les constantes déduites des Observations.* Par le Baron DAMOISEAU. Publiées par le Bureau des Longitudes. Paris 1836," using $9^m\ 21^s{\cdot}5$ for the difference of meridians.

For the first Satellite, Equations 4 and 5 have been taken from the Tables for every Eclipse, and the other Equations for each sixth Eclipse. For the second Satellite, Equation 4 has been taken for every Eclipse, and the others for each fourth Eclipse. For the third Satellite, Equation 5 has been taken for every Eclipse, and the others for each second Eclipse. For the fourth Satellite, the

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whole of the Equations have been taken from the Tables for each Eclipse. In each case the computation has been finished by interpolating, with second differences, the sums of those equations not taken from the Tables for each Eclipse.

For the Configurations and Occultations of the Satellites, as well as the Transits of the Satellites and their Shadows over the disc of the Planet, Mr. WOOLHOUSE's Tables in the APPENDIX to the NAUTICAL ALMANAC for 1835 have been used, with the exception of Table II. of each Satellite, which has been reconstructed to adapt it to DAMOISEAU's New Tables.

The Elements at page 488, for determining the appearance of Saturn's Ring, have been calculated by means of the following formulæ :—

Let Ω represent the mean Longitude of the Ring's ascending Node in the Ecliptic, at the time t.

i, the mean inclination of the plane of the Ring to the Ecliptic.

N, the mean position of the ascending Node in the Equator.

I, the mean inclination to the Equator.

a, the major axis of the Ring at the Planet's mean distance.

ω, the Obliquity of the Ecliptic.

α, the Geocentric Right Ascension
δ, ——————— Declination
ρ, the distance from the Earth
λ, Heliocentric Longitude
β, ——————— Latitude
r, the *mean* distance from the Sun.
} of the Planet.

Then, adopting the late Professor BESSEL's determinations of the values of Ω, i and a, viz. :—

$$\left.\begin{aligned} \Omega &= 166^\circ\ 53'\ 8''\cdot 9 + 46''\cdot 462\ (t-1800) \\ i &= 28\ 10\ 44\cdot 7 - 0\cdot 350\ (t-1800) \end{aligned}\right\}\ \textit{Ast. Nach.}, \text{ No. 274, col. 167.}$$

$$a = 39''\cdot 308\ (\textit{Ast. Nach.}, \text{ No. 275, col. 170})$$

And BOUVARD's value of r, viz. :—

$$r = 9\cdot 54301\ (\textit{Tables of Saturn})$$

$$\tan \phi = \tan i \cos \Omega$$

$$\tan N = \frac{\sin \phi}{\sin (\phi + \omega)} \tan \Omega \qquad \tan I = \frac{\tan (\phi + \omega)}{\cos N}$$

$$\tan Q = \tan I \sin (\alpha - N)$$

$$\tan p = -\frac{\sin Q}{\cos (Q-\delta)} \cot (\alpha - N) \qquad \tan l = \tan (Q - \delta) \cos p$$

$$\sin b = \sin i \cos \beta \sin (\lambda - \Omega) - \cos i \sin \beta$$

$$a' = \frac{a\,r}{\rho} = \frac{[2\cdot 57416]}{\rho} \qquad b' = a' \sin l$$

$$a'' = a' \times \cdot 665 \qquad b'' = b \times \cdot 665$$

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The Mean Places for January 0^d—·130, 1861, of 84 of the 100 Fixed Stars formerly given, have been derived from a manuscript by MR. ADAMS, and the remaining 16 from the fundamental Catalogue for 1840, contained in the NAUTICAL ALMANAC for 1848, pages 436 to 441, by means of the formulæ at page xiv of the PREFACE to the *Second Edition* of the NAUTICAL ALMANAC for 1834. Of the 47 stars inserted for the first time in the NAUTICAL ALMANAC for 1857, the mean places of 43 have been derived from the Greenwich Observations of 1850 as printed, and the observations of 1851 and 1852 as supplied in manuscript by the ASTRONOMER ROYAL. The positions of ν Orionis, h^1 Sagittarii, ρ Capricorni, and γ^1 Virginis have been taken from the Greenwich Twelve-year Catalogue*—the place for 1840 alone having been adopted for the latter star. The proper motions as determined by the REV. R. MAIN, in his paper on the subject, (*Mem. Roy. Ast. Soc. Vol.* xix.) or computed by similar formulæ, have been included in the reductions of the mean places of the 47 additional stars to the year 1860.

The Logarithms of E, F, G, H, and the value of L, at page XIX, of each month, have been computed from the Logarithms of A, B, C, D, in page XX, by the formulæ in the introduction to the Greenwich Twelve-year Catalogue.*

The Logarithms of A, B, C, D, at page XX. of each Month, have been computed agreeably to the formulæ at page 327, omitting only in the values of C and D the terms $-0\cdot00405 \sin 2\,\mathbb{C}$ and $-0\cdot0885 \cos 2\,\mathbb{C}$; and for the only Stars that can be sensibly affected by the omission, viz., the five Polar Stars, a Table of Corrections is given at pages 386 and 387.

The Table of Constants at pages 328 and 329 for facilitating the Reduction of Stars *generally*, has been computed from BESSEL'S formulæ, given at page 327, using the A, B, C, D, contained in this volume.

The apparent places of 142 of the Fixed Stars have been deduced from the mean places for January 0^d—·130, 1861, using the Variables A, B, C, D, in the present Volume with Constants computed for the year 1860, similar to those for 1850 in the Catalogue of the British Association.† For the five Polar Stars the constants have been computed for 1861 and 1862, and interpolated. The corrections were computed independently for every tenth day, with the exception of those for α and δ URSÆ MINORIS, which were interpolated, with second differences, from computations made for every third day of the year.

---

* Catalogue of 2156 Stars, formed from the Observations made during twelve years, from 1836 to 1847, at the Royal Observatory, Greenwich. London. 1849. 4to.

† The Catalogue of Stars of the British Association for the Advancement of Science; containing the Mean Right Ascensions and North Polar Distances of eight thousand three hundred and seventy-seven Fixed Stars, reduced to January 1, 1850: together with their annual precessions, secular variations, and proper motions, as well as the logarithmic constants for computing precession, aberration, and nutation. With a Preface explanatory of their Construction and Application. By the late Francis Baily, Esq. London, 1845. 4to.

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A further correction of the right ascension for *daily* aberration is necessary, where extreme accuracy is required, and may be computed as follows: Let ϕ denote the latitude of the place, and δ the declination of the Star, then the correction (*in time*) for the *upper* transit is,

$$+ 0^s \cdot 0206 \cos \phi \sec \delta$$

and for the *lower* transit,

$$- 0^s \cdot 0206 \cos \phi \sec \delta$$

The Lists of Moon-Culminating Stars, and Stars liable to Occultation by the Moon, have been selected from the Catalogue of the British Association.

The mean places of the Stars for each List were taken in order of preference, 1. From the Catalogue of the 147 Stars in this Work. 2. From AIRY'S Greenwich Twelve-Year Catalogue of 2156 Stars. 3. From the Catalogue of the British Association. The reduction of the Mean to the Apparent Places has been performed by means of the Constants in the Catalogue of the British Association; the corrections for each star on the contiguous days being obtained by different computers for the Moon-Culminating List, and those for the Occultations, by duplicate computations.

The calculations of the Solar and Lunar Eclipses, the Elements of Occultations, and the Occultations visible at Greenwich, have been made according to the methods and formulæ given by Mr. WOOLHOUSE in the APPENDIX to the NAUTICAL ALMANAC for 1836: those relating to the Occultations, in duplicate.

The Tides at London Bridge for the year 1861 have been computed from tables in "An Elementary Treatise on the Tides. By J. W. LUBBOCK, Esq." (London, 1839.)

The Tables for finding the Latitude of a place by Observations of the Pole Star (*α* URSÆ MINORIS), at any hour of the day, are founded on the following formula:

$$l = a - p \cos h + \tfrac{1}{2} \sin 1'' \, (p \sin h)^2 \tan a$$

where l denotes the latitude

a —— the true altitude of the Star

p —— the apparent polar distance, expressed in seconds of arc

h —— the hour angle of the Star $= S - \alpha$; S being the sidereal time of observation, and α the right ascension of the Star.

Table I. contains the value of the *second* term ($p \cos h$) or the *first correction*; assuming, as *mean* values, $p = 86'\ 0''$, and $\alpha = 17^\circ\ 0'$.

Table II. contains the value of the *third* term ($\frac{1}{2} \sin 1'' \, (p \sin h)^2 \tan a$) or the *second correction*, using the same *mean* quantities as in Table I.

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Table III., which is *special* for the year 1861, and depends upon the difference between the true and assumed values of p and α, contains the *third* correction increased by 1′ for the purpose of rendering the quantities additive.

A fourth term ($-\frac{1}{2}\sin^2 1'' (p \cos h)(p \sin h)^2$) is omitted, its greatest value being less than half a second.

In the construction of this Ephemeris generally, duplicate computations have been made where necessary, and isolated calculations performed to guard against systematic error; all results admitting of such test have been finally examined by means of differences, and every precaution taken to secure accuracy in the printing.

J. R. HIND,
Superintendent.

Nautical Almanac Office,
3, Verulam Buildings, Gray's Inn, London.
September 26, 1857.

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PRINCIPAL ARTICLES OF THE CALENDAR, For the Year 1861.

Golden Number	19	Dominical Letter	F
Epact	18	Roman Indiction	4
Solar Cycle	22	Julian Period	6574

FIXED AND MOVEABLE FESTIVALS, ANNIVERSARIES, &c. &c.

Epiphany	Jan. 6	*Pentecost—Whit Sunday*	May 19
Septuagesima Sunday	27	Birth of Q. Victoria	24
Martyrdom of K. Charles I.	30	*Trinity Sunday*	26
Quinquagesima—Shrove Sunday	Feb. 10	Restoration of K. Charles II.	29
Ash Wednesday	13	*Corpus Christi*	30
Quadragesima—1st Sun. in Lent	17	Accession of Q. Victoria	June 20
St. David	Mar. 1	Proclamation	21
St. Patrick	17	St. John Bapt.—Midsum. Day	24
Palm Sunday	24	Birth of Prince Albert	Aug. 26
Annunciation—Lady Day	25	St. Michael—Michaelmas Day	Sept. 29
Good Friday	29	Gunpowder Plot	Nov. 5
EASTER SUNDAY	31	Birth of Prince of Wales	9
Low Sunday	April 7	St. Andrew	30
St. George	23	*1st Sunday in Advent*	Dec. 1
Rogation Sunday	May 5	St. Thomas	21
Ascension Day—Holy Thursday	9	Christmas Day	25

The Year 5622 of the Jewish Era commences on September 5, 1861.
Ramadân (Month of Abstinence observed by the Turks) commences on March 13, 1861.
The Year 1278 of the Mohammedan Era commences on July 9, 1861.

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EXPLANATION OF
ASTRONOMICAL SYMBOLS AND ABBREVIATIONS.

☉	The Sun.
☾	The Moon.
☿	Mercury.
♀	Venus.
⊖ or ♁	The Earth.
♂	Mars.
①	Ceres.
②	Pallas.
③	Juno.
④	Vesta.
⑤	Astræa.
⑥	Hebe.
⑦	Iris.
⑧	Flora.
⑨	Metis.
⑩	Hygeia.
⑪	Parthenope.
⑫	Victoria.
⑬	Egeria.
⑭	Irene.
⑮	Eunomia.
⑯	Psyche.
⑰	Thetis.
⑱	Melpomene.
⑲	Fortuna.
⑳	Massilia.
㉑	Lutetia.
㉒	Calliope.
㉓	Thalia.
㉔	Themis.
㉕	Phocea.
㉖	Proserpine.
㉗	Euterpe.
㉘	Bellona.
㉙	Amphitrite.
㉚	Urania.
㉛	Euphrosyne.
㉜	Pomona.
㉝	Polyhymnia.
㉞	Circe.
㉟	Leucothea.
㊱	Atalanta.
㊲	Fides.
㊳	Leda.
㊴	Lætitia.
㊵	Harmonia.
㊶	Daphne.
㊷	Isis.
㊸	Ariadne.
㊹	Nysa.
㊺	
㊻	
㊼	
㊽	
㊾	

♃	Jupiter.
♄	Saturn.
♅	Uranus.
♆	Neptune.
☌	Conjunction.
□	Quadrature.
☍	Opposition.
☊	Ascending Node.
☋	Descending Node.
N.	North. S. South.
E.	East. W. West.
°	Degrees.
′	Minutes of Arc.
″	Seconds of Arc.
h	Hours.
m	Minutes of Time.
s	Seconds of Time.

		°
0.	♈ Aries - -	0
I.	♉ Taurus- -	30
II.	♊ Gemini -	60
III.	♋ Cancer- -	90
IV.	♌ Leo- - -	120
V.	♍ Virgo - -	150
VI.	♎ Libra - -	180
VII.	♏ Scorpio -	210
VIII.	♐ Sagittarius	240
IX.	♑ Capricornus	270
X.	♒ Aquarius -	300
XI.	♓ Pisces - -	330

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LAW TERMS, 1861.

As settled by Statutes

11 Geo. IV. and 1 Will. IV. cap. 70, s. 6. (Passed July 23, 1830.)
1 Will. IV. - - - - - cap. 3, s. 2. (Passed Dec. 23, 1830.)

Hilary Term - - - -	*Begins* Jan. 11 - -	*Ends* Jan. 31
Easter - - - - - - - -	Apr. 15 - - - -	May 8
Trinity - - - - - - - -	May 22 - - - -	June 12
Michaelmas - - - - - -	Nov. 2 - - - -	Nov. 25

For Returns see Statute 1 Will. IV. cap. 3, s. 2. (Passed Dec. 23, 1830.)

UNIVERSITY TERMS, 1861.

Terms.	Oxford.		Cambridge.		
	Begins.	*Ends.*	*Begins.*	*Divides.*	*Ends.*
Lent - - - -	Jan. 14	Mar. 23	Jan. 13	Feb. 16, Noon.	Mar. 22
Easter - - -	Apr. 10	May 18	Apr. 10	May 23, Noon.	July 5
Trinity - - -	May 22	July 6	- - -	- - - - - - -	- - -
Michaelmas -	Oct. 10	Dec. 17	Oct. 10	Nov. 12, Midnight.	Dec. 16
	The Act, July 2.		*The Commencement*, July 2.		

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ERRATA.

(*Continued from* page xvi *of the Nautical Almanac for* 1860.)

NAUTICAL ALMANAC FOR THE YEAR 1861.

Page 152, Moon's Declination, Aug. $27^d\ 2^h$
for 22 23 26·5 *read* 22 23 16·5.

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EPHEMERIS

FOR THE YEAR

1861,

FOR THE MERIDIAN

OF THE

ROYAL OBSERVATORY AT GREENWICH.

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AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 hour.	THE SUN'S Apparent Declination.	Diff. for 1 hour.	Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, *to be added to Apparent Time.*	Diff. for 1 hour.
		h m s	s	° ′ ″	″	m s	m s	s
Tues.	1	18 48 27·45	11·030	S. 22 59 27·5	13·35	1 11·06	3 58·47	1·170
Wed.	2	18 52 52·16	11·015	22 54 7·2	14·50	1 11·01	4 26·55	1·155
Thur.	3	18 57 16·53	11·000	22 48 19·5	15·63	1 10·96	4 54·28	1·140
Frid.	4	19 1 40·52	10·983	22 42 4·5	16·75	1 10·91	5 21·64	1·123
Sat.	5	19 6 4·10	10·965	22 35 22·5	17·87	1 10·85	5 48·59	1·105
Sun.	6	19 10 27·26	10·946	22 28 13·6	18·98	1 10·78	6 15·12	1·086
Mon.	7	19 14 49·95	10·925	22 20 38·0	20·08	1 10·71	6 41·18	1·065
Tues.	8	19 19 12·14	10·903	22 12 36·0	21·17	1 10·64	7 6·74	1·043
Wed.	9	19 23 33·81	10·880	22 4 7·8	22·25	1 10·57	7 31·78	1·020
Thur.	10	19 27 54·92	10·855	21 55 13·7	23·32	1 10·49	7 56·27	0·996
Frid.	11	19 32 15·45	10·830	21 45 53·9	24·38	1 10·41	8 20·18	0·971
Sat.	12	19 36 35·38	10·804	21 36 8·7	25·43	1 10·33	8 43·49	0·945
Sun.	13	19 40 54·68	10·777	21 25 58·5	26·46	1 10·24	9 6·17	0·917
Mon.	14	19 45 13·32	10·748	21 15 23·5	27·48	1 10·15	9 28·19	0·889
Tues.	15	19 49 31·28	10·719	21 4 24·1	28·48	1 10·06	9 49·53	0·860
Wed.	16	19 53 48·53	10·689	20 53 0·7	29·47	1 9·96	10 10·16	0·830
Thur.	17	19 58 5·07	10·658	20 41 13·4	30·45	1 9·87	10 30·08	0·799
Frid.	18	20 2 20·87	10·627	20 29 2·5	31·41	1 9·77	10 49·28	0·768
Sat.	19	20 6 35·91	10·595	20 16 28·4	32·36	1 9·67	11 7·72	0·736
Sun.	20	20 10 50·18	10·562	20 3 31·7	33·29	1 9·56	11 25·38	0·704
Mon.	21	20 15 3·67	10·529	19 50 12·7	34·21	1 9·46	11 42·27	0·671
Tues.	22	20 19 16·37	10·496	19 36 31·7	35·11	1 9·35	11 58·37	0·638
Wed.	23	20 23 28·28	10·463	19 22 28·9	36·00	1 9·24	12 13·68	0·604
Thur.	24	20 27 39·38	10·429	19 8 4·8	36·88	1 9·13	12 28·18	0·570
Frid.	25	20 31 49·67	10·395	18 53 19·6	37·74	1 9·02	12 41·87	0·537
Sat.	26	20 35 59·15	10·361	18 38 13·9	38·58	1 8·91	12 54·77	0·503
Sun.	27	20 40 7·83	10·327	18 22 47·9	39·41	1 8·80	13 6·85	0·470
Mon.	28	20 44 15·69	10·293	18 7 2·1	40·22	1 8·68	13 18·13	0·436
Tues.	29	20 48 22·73	10·260	17 50 56·7	41·02	1 8·57	13 28·59	0·402
Wed.	30	20 52 28·97	10·226	17 34 32·2	41·80	1 8·45	13 38·24	0·369
Thur.	31	20 56 34·40	10·193	17 17 48·9	42·57	1 8·34	13 47·09	0·335
Frid.	32	21 0 39·02		S. 17 0 47·2		1 8·22	13 55·13	

* *Mean* Time of the Semidiameter passing may be found by subtracting 0ˢ·19 from the *Sidereal* Time.

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AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	THE SUN'S Apparent Declination.	THE SUN'S Semidiam.*	Equation of Time, *to be subtracted from Mean Time.*	Sidereal Time.
		h m s	° ′ ″	′ ″	m s	h m s
Tues.	1	18 48 26·72	S. 22 59 28·3	16 18·2	3 58·39	18 44 28·33
Wed.	2	18 52 51·35	22 54 8·2	16 18·2	4 26·47	18 48 24·88
Thur.	3	18 57 15·63	22 48 20·8	16 18·2	4 54·19	18 52 21·44
Frid.	4	19 1 39·54	22 42 6·0	16 18·2	5 21·54	18 56 18·00
Sat.	5	19 6 3·04	22 35 24·2	16 18·2	5 48·49	19 0 14·56
Sun.	6	19 10 26·12	22 28 15·5	16 18·1	6 15·01	19 4 11·12
Mon.	7	19 14 48·73	22 20 40·2	16 18·1	6 41·06	19 8 7·67
Tues.	8	19 19 10·85	22 12 38·5	16 18·1	7 6·61	19 12 4·23
Wed.	9	19 23 32·44	22 4 10·6	16 18·0	7 31·65	19 16 0·79
Thur.	10	19 27 53·49	21 55 16·7	16 18·0	7 56·14	19 19 57·35
Frid.	11	19 32 13·95	21 45 57·2	16 17·9	8 20·05	19 23 53·90
Sat.	12	19 36 33·81	21 36 12·4	16 17·9	8 43·35	19 27 50·46
Sun.	13	19 40 53·05	21 26 2·5	16 17·8	9 6·03	19 31 47·02
Mon.	14	19 45 11·63	21 15 27·8	16 17·7	9 28·05	19 35 43·58
Tues.	15	19 49 29·53	21 4 28·8	16 17·7	9 49·39	19 39 40·13
Wed.	16	19 53 46·72	20 53 5·7	16 17·6	10 10·03	19 43 36·69
Thur.	17	19 58 3·20	20 41 18·6	16 17·5	10 29·95	19 47 33·25
Frid.	18	20 2 18·95	20 29 8·0	16 17·4	10 49·14	19 51 29·81
Sat.	19	20 6 33·94	20 16 34·4	16 17·4	11 7·58	19 55 26·36
Sun.	20	20 10 48·17	20 3 38·1	16 17·3	11 25·25	19 59 22·92
Mon.	21	20 15 1·62	19 50 19·4	16 17·2	11 42·14	20 3 19·48
Tues.	22	20 19 14·28	19 36 38·7	16 17·1	11 58·24	20 7 16·04
Wed.	23	20 23 26·15	19 22 36·2	16 17·0	12 13·56	20 11 12·59
Thur.	24	20 27 37·21	19 8 12·4	16 16·9	12 28·06	20 15 9·15
Frid.	25	20 31 47·47	18 53 27·6	16 16·8	12 41·76	20 19 5·71
Sat.	26	20 35 56·93	18 38 22·2	16 16·6	12 54·66	20 23 2·26
Sun.	27	20 40 5·57	18 22 56·5	16 16·5	13 6·75	20 26 58·82
Mon.	28	20 44 13·41	18 7 11·0	16 16·4	13 18·03	20 30 55·38
Tues.	29	20 48 20·43	17 51 5·9	16 16·2	13 28·50	20 34 51·93
Wed.	30	20 52 26·65	17 34 41·7	16 16·1	13 38·16	20 38 48·49
Thur.	31	20 56 32·06	17 17 58·6	16 15·9	13 47·02	20 42 45·04
Frid.	32	21 0 36·66	S. 17 0 57·2	16 15·8	13 55·06	20 46 41·60

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

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MEAN TIME.

Day of the Month.	THE SUN'S *Apparent* Longitude. *Noon.*	THE SUN'S *Apparent* Latitude. *Noon.*	Logarithm of the Radius Vector of the Earth. *Noon.*	THE MOON'S Semidiameter. *Noon.*	THE MOON'S Semidiameter. *Midnight.*	THE MOON'S Horizontal Parallax. *Noon.*	THE MOON'S Horizontal Parallax. *Midnight.*
	° ′ ″	″		′ ″	′ ″	′ ″	′ ″
1	281 8 11·1	S. 0·68	9·9926475	16 9·8	16 10·7	59 11·0	59 14·1
2	282 9 20·4	0·76	9·9926524	16 11·1	16 11·2	59 15·7	59 15·9
3	283 10 29·9	0·82	9·9926598	16 10·9	16 10·3	59 14·9	59 12·8
4	284 11 39·7	0·85	9·9926696	16 9·4	16 8·3	59 9·5	59 5·3
5	285 12 49·6	0·84	9·9926816	16 6·8	16 5·1	59 0·0	58 53·7
6	286 13 59·6	0·81	9·9926957	16 3·1	16 0·8	58 46·3	58 37·9
7	287 15 9·6	0·75	9·9927118	15 58·2	15 55·3	58 28·3	58 17·6
8	288 16 19·6	0·66	9·9927298	15 52·0	15 48·5	58 5·8	57 52·8
9	289 17 29·5	0·55	9·9927495	15 44·6	15 40·6	57 38·8	57 23·8
10	290 18 39·2	0·42	9·9927709	15 36·2	15 31·7	57 8·0	56 51·5
11	291 19 48·6	0·28	9·9927940	15 27·1	15 22·4	56 34·6	56 17·4
12	292 20 57·6	0·15	9·9928187	15 17·7	15 13·1	56 0·3	55 43·4
13	293 22 6·1	S. 0·02	9·9928450	15 8·7	15 4·5	55 27·2	55 11·9
14	294 23 14·0	N. 0·10	9·9928729	15 0·7	14 57·2	54 57·8	54 45·1
15	295 24 21·2	0·20	9·9929026	14 54·2	14 51·7	54 34·0	54 24·9
16	296 25 27·6	0·28	9·9929341	14 49·8	14 48·6	54 18·1	54 13·5
17	297 26 33·2	0·33	9·9929674	14 48·0	14 48·0	54 11·2	54 11·5
18	298 27 38·0	0·35	9·9930027	14 48·8	14 50·4	54 14·4	54 20·0
19	299 28 41·8	0·34	9·9930401	14 52·6	14 55·5	54 28·2	54 39·0
20	300 29 44·6	0·30	9·9930797	14 59·2	15 3·5	54 52·3	55 8·1
21	301 30 46·3	0·23	9·9931217	15 8·4	15 13·8	55 26·1	55 45·9
22	302 31 47·0	0·14	9·9931661	15 19·7	15 25·9	56 7·4	56 30·2
23	303 32 46·7	N. 0·03	9·9932131	15 32·4	15 39·1	56 54·0	57 18·4
24	304 33 45·4	S. 0·10	9·9932626	15 45·7	15 52·2	57 42·7	58 6·4
25	305 34 43·1	0·23	9·9933146	15 58·4	16 4·1	58 29·1	58 50·2
26	306 35 39·9	0·36	9·9933693	16 9·4	16 14·0	59 9·4	59 26·1
27	307 36 35·8	0·48	9·9934267	16 17·8	16 20·7	59 40·1	59 50·9
28	308 37 30·7	0·59	9·9934867	16 22·8	16 24·0	59 58·6	60 3·0
29	309 38 24·7	0·68	9·9935492	16 24·4	16 23·9	60 4·3	60 2·5
30	310 39 17·9	0·75	9·9936141	16 22·6	16 20·7	59 57·9	59 50·9
31	311 40 10·3	0·78	9·9936813	16 18·2	16 15·2	59 41·8	59 30·8
32	312 41 1·9	S. 0·78	9·9937508	16 11·8	16 8·2	59 18·4	59 4·9

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MEAN TIME.

THE MOON'S

Day of the Week.	Day of the Month.	Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.	Age. Noon.	Meridian Passage.
		° ′ ″	° ′ ″	° ′ ″	° ′ ″	d	h m
Tues.	1	157 9 56·0	164 14 58·9	S. 3 41 44·5	S. 4 7 55·6	20·0	16 17·6
Wed.	2	171 20 41·1	178 26 43·5	4 30 21·2	4 48 39·3	21·0	17 6·3
Thur.	3	185 32 48·7	192 38 39·3	5 2 32·2	5 11 47·5	22·0	17 56·0
Frid.	4	199 43 59·1	206 48 31·9	5 16 17·2	5 15 58·5	23·0	18 47·7
Sat.	5	213 52 2·1	220 54 13·4	5 10 53·4	5 1 8·9	24·0	19 42·2
Sun.	6	227 54 50·2	234 53 35·7	4 46 56·7	4 28 32·7	25·0	20 39·4
Mon.	7	241 50 13·6	248 44 27·3	4 6 16·7	3 40 32·4	26·0	21 38·3
Tues.	8	255 36 0·6	262 24 37·8	3 11 46·9	2 40 29·2	27·0	22 37·1
Wed.	9	269 10 4·0	275 52 5·9	2 7 9·3	1 32 20·5	28·0	23 33·8
Thur.	10	282 30 32·1	289 5 12·9	S. 0 56 34·2	S. 0 20 22·2	29·0	0
Frid.	11	295 36 1·8	302 2 54·9	N. 0 15 44·8	N. 0 51 17·9	0·4	0 27·1
Sat.	12	308 25 52·1	314 44 56·5	1 25 50·4	1 58 58·3	1·4	1 16·5
Sun.	13	321 0 14·8	327 11 57·5	2 30 19·9	2 59 36·2	2·4	2 2·2
Mon.	14	333 20 18·9	339 25 36·6	3 26 31·3	3 50 51·7	3·4	2 45·0
Tues.	15	345 28 11·7	351 28 28·2	4 12 25·9	4 31 4·6	4·4	3 25·9
Wed.	16	357 26 52·8	3 23 55·0	4 46 40·4	4 59 6·8	5·4	4 6·1
Thur.	17	9 20 5·6	15 15 57·8	5 8 19·5	5 14 14·2	6·4	4 46·5
Frid.	18	21 12 5·7	27 9 4·1	5 16 48·4	5 15 59·4	7·4	5 28·1
Sat.	19	33 7 29·6	39 7 56·9	5 11 45·8	5 4 7·0	8·4	6 12·0
Sun.	20	45 11 1·3	51 17 17·1	4 53 3·2	4 38 35·5	9·4	6 58·9
Mon.	21	57 27 16·6	63 41 30·0	4 20 46·9	3 59 42·3	10·4	7 49·3
Tues.	22	70 0 24·4	76 24 22·9	3 35 28·0	3 8 13·5	11·4	8 43·0
Wed.	23	82 53 44·1	89 28 41·3	2 38 11·8	2 5 39·6	12·4	9 39·1
Thur.	24	96 9 21·5	102 55 44·9	1 30 56·6	N. 0 54 28·1	13·4	10 36·3
Frid.	25	109 47 44·7	116 45 6·1	N. 0 16 43·3	S. 0 21 45·0	14·4	11 32·8
Sat.	26	123 47 27·1	130 54 18·3	S. 1 0 19·9	1 38 22·2	15·4	12 27·6
Sun.	27	138 5 3·6	145 19 1·3	2 15 10·6	2 50 4·0	16·4	13 20·3
Mon.	28	152 35 25·5	159 53 27·2	3 22 22·7	3 51 29·4	17·4	14 11·5
Tues.	29	167 12 17·0	174 31 5·9	4 16 51·5	4 38 1·0	18·4	15 1·8
Wed.	30	181 49 7·1	189 5 38·6	4 54 37·2	5 6 24·3	19·4	15 52·5
Thur.	31	196 20 2·5	203 31 47·4	5 13 14·8	5 15 6·8	20·4	16 44·4
Frid.	32	210 40 27·8	217 45 43·9	S. 5 12 4·4	S. 5 4 17·2	21·4	17 38·4

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MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 1.		
	h m s	° ′ ″	″
0	10 30 0·55	N. 5 27 11·5	151·92
1	10 32 8·95	5 12 0·0	152·21
2	10 34 17·27	4 56 46·7	152·48
3	10 36 25·50	4 41 31·9	152·73
4	10 38 33·64	4 26 15·4	152·98
5	10 40 41·71	4 10 57·5	153·21
6	10 42 49·70	3 55 38·3	153·42
7	10 44 57·63	3 40 17·8	153·62
8	10 47 5·49	3 24 56·0	153·81
9	10 49 13·29	3 9 33·2	153·98
10	10 51 21·03	2 54 9·3	154·13
11	10 53 28·72	2 38 44·5	154·28
12	10 55 36·37	2 23 18·8	154·42
13	10 57 43·97	2 7 52·3	154·54
14	10 59 51·54	1 52 25·1	154·64
15	11 1 59·07	1 36 57·3	154·73
16	11 4 6·58	1 21 28·9	154·80
17	11 6 14·06	1 6 0·1	154·86
18	11 8 21·51	0 50 31·0	154·90
19	11 10 28·96	0 35 1·6	154·93
20	11 12 36·40	0 19 31·9	154·95
21	11 14 43·82	N. 0 4 2·2	154·95
22	11 16 51·25	S. 0 11 27·5	154·94
23	11 18 58·68	S. 0 26 57·2	154·92
	WEDNESDAY 2.		
0	11 21 6·12	S. 0 42 26·7	154·89
1	11 23 13·57	0 57 56·0	154·84
2	11 25 21·04	1 13 25·0	154·77
3	11 27 28·53	1 28 53·6	154·69
4	11 29 36·04	1 44 21·8	154·59
5	11 31 43·59	1 59 49·4	154·49
6	11 33 51·17	2 15 16·3	154·36
7	11 35 58·80	2 30 42·5	154·23
8	11 38 6·46	2 46 7·8	154·08
9	11 40 14·18	3 1 32·3	153·91
10	11 42 21·95	3 16 55·8	153·73
11	11 44 29·78	3 32 18·1	153·54
12	11 46 37·68	3 47 39·4	153·34
13	11 48 45·64	4 2 59·4	153·12
14	11 50 53·68	4 18 18·2	152·89
15	11 53 1·80	4 33 35·5	152·64
16	11 55 10·00	4 48 51·4	152·38
17	11 57 18·28	5 4 5·6	152·10
18	11 59 26·66	5 19 18·3	151·82
19	12 1 35·13	5 34 29·2	151·51
20	12 3 43·70	5 49 38·3	151·19
21	12 5 52·38	6 4 45·4	150·87
22	12 8 1·16	6 19 50·6	150·52
23	12 10 10·06	6 34 53·8	150·16
24	12 12 19·08	S. 6 49 54·7	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 3.		
	h m s	° ′ ″	″
0	12 12 19·08	S. 6 49 54·7	149·79
1	12 14 28·22	7 4 53·5	149·41
2	12 16 37·48	7 19 49·9	149·01
3	12 18 46·88	7 34 44·0	148·59
4	12 20 56·41	7 49 35·5	148·17
5	12 23 6·08	8 4 24·5	147·72
6	12 25 15·90	8 19 10·9	147·27
7	12 27 25·87	8 33 54·5	146·80
8	12 29 35·99	8 48 35·3	146·31
9	12 31 46·26	9 3 13·1	145·81
10	12 33 56·69	9 17 48·0	145·30
11	12 36 7·29	9 32 19·8	144·78
12	12 38 18·05	9 46 48·4	144·23
13	12 40 28·99	10 1 13·8	143·68
14	12 42 40·10	10 15 35·9	143·11
15	12 44 51·40	10 29 54·6	142·53
16	12 47 2·88	10 44 9·8	141·94
17	12 49 14·54	10 58 21·4	141·32
18	12 51 26·40	11 12 29·4	140·70
19	12 53 38·45	11 26 33·5	140·06
20	12 55 50·70	11 40 33·9	139·41
21	12 58 3·16	11 54 30·3	138·74
22	13 0 15·82	12 8 22·8	138·05
23	13 2 28·69	S. 12 22 11·1	137·36
	FRIDAY 4.		
0	13 4 41·77	S. 12 35 55·2	136·66
1	13 6 55·07	12 49 35·1	135·93
2	13 9 8·58	13 3 10·7	135·20
3	13 11 22·32	13 16 41·9	134·45
4	13 13 36·29	13 30 8·6	133·68
5	13 15 50·48	13 43 30·7	132·90
6	13 18 4·90	13 56 48·1	132·10
7	13 20 19·56	14 10 0·7	131·30
8	13 22 34·45	14 23 8·5	130·47
9	13 24 49·58	14 36 11·4	129·64
10	13 27 4·95	14 49 9·2	128·79
11	13 29 20·57	15 2 1·9	127·92
12	13 31 36·43	15 14 49·4	127·05
13	13 33 52·54	15 27 31·7	126·16
14	13 36 8·90	15 40 8·7	125·25
15	13 38 25·52	15 52 40·2	124·33
16	13 40 42·39	16 5 6·2	123·40
17	13 42 59·52	16 17 26·6	122·45
18	13 45 16·90	16 29 41·3	121·49
19	13 47 34·55	16 41 50·2	120·51
20	13 49 52·46	16 53 53·2	119·52
21	13 52 10·63	17 5 50·3	118·52
22	13 54 29·06	17 17 41·4	117·50
23	13 56 47·76	17 29 26·4	116·46
24	13 59 6·73	S. 17 41 5·2	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m
	SATURDAY 5.				*MONDAY* 7.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	13 59 6·73	S. 17 41 5·2	115·42	0	15 55 18·61	S. 24 33 51·8	50·93
1	14 1 25·97	17 52 37·8	114·37	1	15 57 49·11	24 38 57·4	49·34
2	14 3 45·47	18 4 4·0	113·30	2	16 0 19·76	24 43 53·4	47·74
3	14 6 5·25	18 15 23·8	112·21	3	16 2 50·54	24 48 39·9	46·16
4	14 8 25·29	18 26 37·0	111·11	4	16 5 21·45	24 53 16·9	44·56
5	14 10 45·61	18 37 43·7	110·00	5	16 7 52·48	24 57 44·2	42·95
6	14 13 6·19	18 48 43·7	108·87	6	16 10 23·62	25 2 1·9	41·34
7	14 15 27·05	18 59 36·9	107·73	7	16 12 54·87	25 6 9·9	39·72
8	14 17 48·18	19 10 23·3	106·58	8	16 15 26·22	25 10 8·3	38·10
9	14 20 9·58	19 21 2·8	105·41	9	16 17 57·67	25 13 56·9	36·47
10	14 22 31·24	19 31 35·3	104·23	10	16 20 29·21	25 17 35·7	34·84
11	14 24 53·18	19 42 0·7	103·04	11	16 23 0·82	25 21 4·8	33·21
12	14 27 15·39	19 52 18·9	101·84	12	16 25 32·51	25 24 24·0	31·58
13	14 29 37·87	20 2 30·0	100·62	13	16 28 4·27	25 27 33·5	29·93
14	14 32 0·62	20 12 33·7	99·40	14	16 30 36·09	25 30 33·1	28·29
15	14 34 23·64	20 22 30·1	98·15	15	16 33 7·96	25 33 22·8	26·65
16	14 36 46·93	20 32 19·0	96·90	16	16 35 39·87	25 36 2·7	25·00
17	14 39 10·48	20 42 0·4	95·63	17	16 38 11·82	25 38 32·7	23·35
18	14 41 34·29	20 51 34·1	94·35	18	16 40 43·80	25 40 52·8	21·70
19	14 43 58·37	21 1 0·2	93·06	19	16 43 15·81	25 43 3·0	20·05
20	14 46 22·70	21 10 18·6	91·75	20	16 45 47·83	25 45 3·3	18·39
21	14 48 47·30	21 19 29·1	90·43	21	16 48 19·85	25 46 53·7	16·74
22	14 51 12·15	21 28 31·7	89·10	22	16 50 51·87	25 48 34·1	15·08
23	14 53 37·26	S. 21 37 26·3	87·76	23	16 53 23·89	S. 25 50 4·6	13·43
	SUNDAY 6.				*TUESDAY* 8.		
0	14 56 2·62	S. 21 46 12·9	86·41	0	16 55 55·89	S. 25 51 25·2	11·77
1	14 58 28·23	21 54 51·4	85·05	1	16 58 27·87	25 52 35·9	10·12
2	15 0 54·09	22 3 21·7	83·67	2	17 0 59·81	25 53 36·6	8·47
3	15 3 20·20	22 11 43·7	82·29	3	17 3 31·71	25 54 27·4	6·81
4	15 5 46·55	22 19 57·4	80·89	4	17 6 3·57	25 55 8·3	5·16
5	15 8 13·14	22 28 2·8	79·48	5	17 8 35·37	25 55 39·2	3·51
6	15 10 39·96	22 35 59·7	78·06	6	17 11 7·10	25 56 0·3	1·86
7	15 13 7·02	22 43 48·1	76·64	7	17 13 38·77	25 56 11·5	0·22
8	15 15 34·30	22 51 27·9	75·20	8	17 16 10·35	25 56 12·8	1·42
9	15 18 1·81	22 58 59·1	73·75	9	17 18 41·85	25 56 4·3	3·06
10	15 20 29·55	23 6 21·6	72·29	10	17 21 13·26	25 55 45·9	4·71
11	15 22 57·50	23 13 35·3	70·82	11	17 23 44·56	25 55 17·7	6·33
12	15 25 25·66	23 20 40·2	69·34	12	17 26 15·76	25 54 39·7	7·96
13	15 27 54·04	23 27 36·2	67·85	13	17 28 46·84	25 53 51·9	9·59
14	15 30 22·62	23 34 23·4	66·36	14	17 31 17·79	25 52 54·4	11·21
15	15 32 51·40	23 41 1·5	64·85	15	17 33 48·60	25 51 47·1	12·82
16	15 35 20·37	23 47 30·6	63·33	16	17 36 19·28	25 50 30·2	14·43
17	15 37 49·54	23 53 50·6	61·81	17	17 38 49·80	25 49 3·6	16·04
18	15 40 18·89	24 0 1·4	60·28	18	17 41 20·17	25 47 27·3	17·63
19	15 42 48·42	24 6 3·1	58·73	19	17 43 50·38	25 45 41·5	19·23
20	15 45 18·13	24 11 55·5	57·19	20	17 46 20·42	25 43 46·2	20·81
21	15 47 48·01	24 17 38·6	55·63	21	17 48 50·28	25 41 41·3	22·39
22	15 50 18·06	24 23 12·4	54·07	22	17 51 19·95	25 39 26·9	23·96
23	15 52 48·26	24 28 36·8	52·50	23	17 53 49·44	25 37 3·1	25·53
24	15 55 18·61	S. 24 33 51·8		24	17 56 18·72	S. 25 34 29·9	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 9.		
	h m s	° ′ ″	″
0	17 56 18·72	S. 25 34 29·9	27·09
1	17 58 47·80	25 31 47·4	28·64
2	18 1 16·67	25 28 55·5	30·18
3	18 3 45·32	25 25 54·4	31·72
4	18 6 13·74	25 22 44·1	33·25
5	18 8 41·94	25 19 24·6	34·76
6	18 11 9·89	25 15 56·0	36·27
7	18 13 37·61	25 12 18·4	37·77
8	18 16 5·07	25 8 31·8	39·26
9	18 18 32·28	25 4 36·2	40·75
10	18 20 59·23	25 0 31·7	42·22
11	18 23 25·91	24 56 18·4	43·68
12	18 25 52·32	24 51 56·3	45·14
13	18 28 18·45	24 47 25·5	46·58
14	18 30 44·30	24 42 46·0	48·01
15	18 33 9·86	24 37 57·9	49·43
16	18 35 35·12	24 33 1·3	50·84
17	18 38 0·09	24 27 56·2	52·25
18	18 40 24·75	24 22 42·8	53·63
19	18 42 49·11	24 17 21·0	55·01
20	18 45 13·15	24 11 50·9	56·38
21	18 47 36·88	24 6 12·6	57·73
22	18 50 0·28	24 0 26·2	59·08
23	18 52 23·37	S. 23 54 31·7	60·41
	THURSDAY 10.		
0	18 54 46·12	S. 23 48 29·3	61·72
1	18 57 8·54	23 42 19·0	63·03
2	18 59 30·62	23 36 0·8	64·33
3	19 1 52·37	23 29 34·8	65·61
4	19 4 13·77	23 23 1·1	66·88
5	19 6 34·83	23 16 19·9	68·13
6	19 8 55·54	23 9 31·1	69·38
7	19 11 15·90	23 2 34·8	70·61
8	19 13 35·90	22 55 31·1	71·83
9	19 15 55·55	22 48 20·2	73·03
10	19 18 14·85	22 41 2·0	74·22
11	19 20 33·78	22 33 36·6	75·40
12	19 22 52·35	22 26 4·2	76·57
13	19 25 10·55	22 18 24·8	77·73
14	19 27 28·39	22 10 38·4	78·87
15	19 29 45·86	22 2 45·1	80·00
16	19 32 2·96	21 54 45·2	81·11
17	19 34 19·69	21 46 38·5	82·21
18	19 36 36·05	21 38 25·2	83·30
19	19 38 52·03	21 30 5·4	84·37
20	19 41 7·64	21 21 39·2	85·43
21	19 43 22·87	21 13 6·7	86·47
22	19 45 37·73	21 4 27·8	87·50
23	19 47 52·21	20 55 42·8	88·53
24	19 50 6·31	S. 20 46 51·6	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 11.		
	h m s	° ′ ″	″
0	19 50 6·31	S. 20 46 51·6	89·53
1	19 52 20·03	20 37 54·4	90·52
2	19 54 33·38	20 28 51·3	91·50
3	19 56 46·35	20 19 42·2	92·47
4	19 58 58·94	20 10 27·4	93·42
5	20 1 11·15	20 1 6·9	94·36
6	20 3 22·99	19 51 40·7	95·28
7	20 5 34·46	19 42 9·0	96·19
8	20 7 45·54	19 32 31·9	97·09
9	20 9 56·25	19 22 49·3	97·97
10	20 12 6·59	19 13 1·5	98·84
11	20 14 16·56	19 3 8·4	99·70
12	20 16 26·15	18 53 10·2	100·55
13	20 18 35·37	18 43 6·9	101·38
14	20 20 44·22	18 32 58·6	102·20
15	20 22 52·70	18 22 45·4	103·00
16	20 25 0·82	18 12 27·4	103·80
17	20 27 8·57	18 2 4·6	104·57
18	20 29 15·95	17 51 37·2	105·34
19	20 31 22·97	17 41 5·1	106·09
20	20 33 29·63	17 30 28·5	106·83
21	20 35 35·93	17 19 47·5	107·56
22	20 37 41·87	17 9 2·2	108·28
23	20 39 47·45	S. 16 58 12·5	108·98
	SATURDAY 12.		
0	20 41 52·69	S. 16 47 18·6	109·66
1	20 43 57·57	16 36 20·6	110·34
2	20 46 2·10	16 25 18·6	111·01
3	20 48 6·29	16 14 12·5	111·66
4	20 50 10·13	16 3 2·6	112·30
5	20 52 13·63	15 51 48·8	112·92
6	20 54 16·79	15 40 31·2	113·54
7	20 56 19·61	15 29 10·0	114·14
8	20 58 22·09	15 17 45·1	114·73
9	21 0 24·25	15 6 16·8	115·31
10	21 2 26·08	14 54 44·9	115·87
11	21 4 27·58	14 43 9·7	116·43
12	21 6 28·75	14 31 31·1	116·97
13	21 8 29·61	14 19 49·3	117·51
14	21 10 30·15	14 8 4·2	118·02
15	21 12 30·37	13 56 16·1	118·53
16	21 14 30·29	13 44 24·9	119·03
17	21 16 29·90	13 32 30·7	119·52
18	21 18 29·20	13 20 33·6	119·99
19	21 20 28·20	13 8 33·6	120·45
20	21 22 26·90	12 56 30·9	120·91
21	21 24 25·31	12 44 25·5	121·35
22	21 26 23·42	12 32 17·4	121·77
23	21 28 21·25	12 20 6·8	122·19
24	21 30 18·79	S. 12 7 53·6	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SUNDAY 13.				*TUESDAY* 15.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	21 30 18·79	S. 12 7 53·6	122·60	0	22 59 59·25	S. 1 51 4·6	131·26
1	21 32 16·05	11 55 38·0	123·00	1	23 1 47·52	1 37 57·0	131·24
2	21 34 13·03	11 43 20·0	123·38	2	23 3 35·70	1 24 49·6	131·22
3	21 36 9·74	11 30 59·7	123·76	3	23 5 23·79	1 11 42·3	131·19
4	21 38 6·18	11 18 37·1	124·13	4	23 7 11·80	0 58 35·1	131·15
5	21 40 2·35	11 6 12·3	124·49	5	23 8 59·74	0 45 28·2	131·10
6	21 41 58·25	10 53 45·4	124·83	6	23 10 47·60	0 32 21·6	131·05
7	21 43 53·89	10 41 16·4	125·17	7	23 12 35·40	0 19 15·3	130·99
8	21 45 49·28	10 28 45·4	125·49	8	23 14 23·13	S. 0 6 9·4	130·92
9	21 47 44·42	10 16 12·5	125·81	9	23 16 10·81	N. 0 6 56·1	130·85
10	21 49 39·30	10 3 37·6	126·11	10	23 17 58·43	0 20 1·2	130·77
11	21 51 33·94	9 51 0·9	126·41	11	23 19 46·00	0 33 5·8	130·68
12	21 53 28·34	9 38 22·5	126·70	12	23 21 33·52	0 46 9·9	130·59
13	21 55 22·50	9 25 42·3	126·98	13	23 23 21·00	0 59 13·4	130·49
14	21 57 16·44	9 13 0·4	127·25	14	23 25 8·44	1 12 16·4	130·38
15	21 59 10·14	9 0 16·9	127·50	15	23 26 55·85	1 25 18·7	130·27
16	22 1 3·61	8 47 31·9	127·75	16	23 28 43·22	1 38 20·3	130·15
17	22 2 56·86	8 34 45·4	127·99	17	23 30 30·57	1 51 21·2	130·02
18	22 4 49·90	8 21 57·4	128·22	18	23 32 17·90	2 4 21·4	129·89
19	22 6 42·72	8 9 8·1	128·45	19	23 34 5·21	2 17 20·7	129·75
20	22 8 35·33	7 56 17·4	128·66	20	23 35 52·51	2 30 19·2	129·60
21	22 10 27·73	7 43 25·4	128·86	21	23 37 39·80	2 43 16·9	129·45
22	22 12 19·93	7 30 32·2	129·06	22	23 39 27·08	2 56 13·6	129·29
23	22 14 11·93	S. 7 17 37·9	129·24	23	23 41 14·36	N. 3 9 9·4	129·13
	MONDAY 14.				*WEDNESDAY* 16.		
0	22 16 3·73	S. 7 4 42·4	129·42	0	23 43 1·64	N. 3 22 4·1	128·95
1	22 17 55·34	6 51 45·9	129·59	1	23 44 48·93	3 34 57·8	128·77
2	22 19 46·77	6 38 48·3	129·75	2	23 46 36·23	3 47 50·5	128·59
3	22 21 38·02	6 25 49·8	129·91	3	23 48 23·55	4 0 42·1	128·40
4	22 23 29·09	6 12 50·3	130·05	4	23 50 10·89	4 13 32·5	128·21
5	22 25 19·98	5 59 50·0	130·19	5	23 51 58·25	4 26 21·7	128·00
6	22 27 10·70	5 46 48·9	130·31	6	23 53 45·63	4 39 9·7	127·79
7	22 29 1·26	5 33 47·0	130·43	7	23 55 33·05	4 51 56·5	127·58
8	22 30 51·66	5 20 44·4	130·54	8	23 57 20·51	5 4 42·0	127·36
9	22 32 41·89	5 7 41·2	130·64	9	23 59 8·00	5 17 26·1	127·13
10	22 34 31·97	4 54 37·3	130·74	10	0 0 55·54	5 30 8·8	126·89
11	22 36 21·90	4 41 32·9	130·83	11	0 2 43·12	5 42 50·2	126·64
12	22 38 11·69	4 28 27·9	130·91	12	0 4 30·76	5 55 30·0	126·40
13	22 40 1·34	4 15 22·5	130·98	13	0 6 18·45	6 8 8·4	126·15
14	22 41 50·85	4 2 16·6	131·04	14	0 8 6·20	6 20 45·3	125·89
15	22 43 40·22	3 49 10·4	131·09	15	0 9 54·02	6 33 20·6	125·62
16	22 45 29·46	3 36 3·8	131·13	16	0 11 41·90	6 45 54·3	125·35
17	22 47 18·58	3 22 56·9	131·18	17	0 13 29·85	6 58 26·4	125·07
18	22 49 7·58	3 9 49·8	131·22	18	0 15 17·88	7 10 56·8	124·78
19	22 50 56·46	2 56 42·5	131·24	19	0 17 5·99	7 23 25·5	124·49
20	22 52 45·23	2 43 35·1	131·26	20	0 18 54·19	7 35 52·5	124·19
21	22 54 33·89	2 30 27·5	131·27	21	0 20 42·47	7 48 17·7	123·89
22	22 56 22·44	2 17 19·8	131·27	22	0 22 30·84	8 0 41·0	123·58
23	22 58 10·89	2 4 12·2	131·27	23	0 24 19·31	8 13 2·5	123·26
24	22 59 59·25	S. 1 51 4·6		24	0 26 7·87	N. 8 25 22·0	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 17.				*SATURDAY* 19.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	0 26 7·87	N. 8 25 22·0	122·93	0	1 56 10·99	N.17 26 27·6	99·24
1	0 27 56·54	8 37 39·6	122·60	1	1 58 9·01	17 36 23·0	98·56
2	0 29 45·32	8 49 55·2	122·27	2	2 0 7·30	17 46 14·4	97·87
3	0 31 34·21	9 2 8·8	121·92	3	2 2 5·87	17 56 1·6	97·17
4	0 33 23·22	9 14 20·4	121·57	4	2 4 4·72	18 5 44·7	96·47
5	0 35 12·35	9 26 29·8	121·22	5	2 6 3·86	18 15 23·5	95·75
6	0 37 1·60	9 38 37·1	120·85	6	2 8 3·28	18 24 58·0	95·03
7	0 38 50·97	9 50 42·2	120·48	7	2 10 2·99	18 34 28·1	94·29
8	0 40 40·48	10 2 45·1	120·10	8	2 12 2·99	18 43 53·9	93·55
9	0 42 30·13	10 14 45·8	119·72	9	2 14 3·29	18 53 15·2	92·80
10	0 44 19·91	10 26 44·1	119·34	10	2 16 3·88	19 2 32·0	92·04
11	0 46 9·84	10 38 40·1	118·94	11	2 18 4·78	19 11 44·3	91·27
12	0 47 59·91	10 50 33·9	118·54	12	2 20 5·97	19 20 51·9	90·49
13	0 49 50·13	11 2 25·2	118·13	13	2 22 7·47	19 29 54·8	89·70
14	0 51 40·51	11 14 14·0	117·72	14	2 24 9·27	19 38 53·1	88·90
15	0 53 31·05	11 26 0·3	117·30	15	2 26 11·38	19 47 46·5	88·10
16	0 55 21·74	11 37 44·1	116·87	16	2 28 13·80	19 56 35·1	87·29
17	0 57 12·60	11 49 25·3	116·43	17	2 30 16·54	20 5 18·8	86·46
18	0 59 3·64	12 1 3·8	115·99	18	2 32 19·58	20 13 57·6	85·63
19	1 0 54·84	12 12 39·8	115·54	19	2 34 22·94	20 22 31·4	84·78
20	1 2 46·22	12 24 13·0	115·08	20	2 36 26·62	20 31 0·1	83·93
21	1 4 37·78	12 35 43·5	114·61	21	2 38 30·62	20 39 23·7	83·07
22	1 6 29·53	12 47 11·1	114·14	22	2 40 34·93	20 47 42·1	82·20
23	1 8 21·46	N.12 58 36·0	113·66	23	2 42 39·57	N.20 55 55·3	81·32
	FRIDAY 18.				*SUNDAY* 20.		
0	1 10 13·58	N.13 9 58·0	113·17	0	2 44 44·53	N.21 4 3·1	80·42
1	1 12 5·90	13 21 17·1	112·68	1	2 46 49·82	21 12 5·6	79·52
2	1 13 58·42	13 32 33·2	112·18	2	2 48 55·43	21 20 2·8	78·61
3	1 15 51·13	13 43 46·2	111·67	3	2 51 1·37	21 27 54·5	77·69
4	1 17 44·06	13 54 56·3	111·16	4	2 53 7·64	21 35 40·6	76·76
5	1 19 37·19	14 6 3·3	110·64	5	2 55 14·23	21 43 21·2	75·82
6	1 21 30·54	14 17 7·1	110·11	6	2 57 21·16	21 50 56·1	74·87
7	1 23 24·10	14 28 7·7	109·57	7	2 59 28·42	21 58 25·3	73·91
8	1 25 17·88	14 39 5·1	109·02	8	3 1 36·01	22 5 48·8	72·94
9	1 27 11·88	14 49 59·3	108·47	9	3 3 43·93	22 13 6·4	71·96
10	1 29 6·12	15 0 50·1	107·91	10	3 5 52·18	22 20 18·1	70·97
11	1 31 0·58	15 11 37·6	107·34	11	3 8 0·77	22 27 23·9	69·97
12	1 32 55·27	15 22 21·6	106·77	12	3 10 9·70	22 34 23·8	68·96
13	1 34 50·20	15 33 2·2	106·19	13	3 12 18·96	22 41 17·6	67·94
14	1 36 45·37	15 43 39·3	105·60	14	3 14 28·55	22 48 5·2	66·91
15	1 38 40·79	15 54 12·9	105·00	15	3 16 38·48	22 54 46·6	65·87
16	1 40 36·45	16 4 42·9	104·39	16	3 18 48·74	23 1 21·8	64·82
17	1 42 32·36	16 15 9·3	103·77	17	3 20 59·33	23 7 50·7	63·75
18	1 44 28·53	16 25 31·9	103·15	18	3 23 10·26	23 14 13·2	62·68
19	1 46 24·95	16 35 50·8	102·52	19	3 25 21·52	23 20 29·3	61·60
20	1 48 21·63	16 46 6·0	101·88	20	3 27 33·12	23 26 38·9	60·51
21	1 50 18·57	16 56 17·3	101·24	21	3 29 45·04	23 32 42·0	59·41
22	1 52 15·77	17 6 24·7	100·58	22	3 31 57·30	23 38 38·5	58·29
23	1 54 13·25	17 16 28·2	99·91	23	3 34 9·89	23 44 28·2	57·17
24	1 56 10·99	N.17 26 27·6		24	3 36 22·81	N.23 50 11·2	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 21.				*WEDNESDAY 23.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	3 36 22·81	N.23 50 11·2	56·04	0	5 28 25·42	N.25 54 1·4	8·96
1	3 38 36·06	23 55 47·5	54·90	1	5 30 51·06	25 53 7·6	10·49
2	3 40 49·64	24 1 16·9	53·75	2	5 33 16·85	25 52 4·6	12·02
3	3 43 3·55	24 6 39·4	52·59	3	5 35 42·77	25 50 52·5	13·56
4	3 45 17·78	24 11 54·9	51·41	4	5 38 8·82	25 49 31·1	15·10
5	3 47 32·34	24 17 3·4	50·23	5	5 40 35·00	25 48 0·5	16·64
6	3 49 47·22	24 22 4·8	49·04	6	5 43 1·30	25 46 20·6	18·19
7	3 52 2·42	24 26 59·0	47·84	7	5 45 27·72	25 44 31·5	19·74
8	3 54 17·94	24 31 46·0	46·62	8	5 47 54·24	25 42 33·1	21·29
9	3 56 33·77	24 36 25·8	45·40	9	5 50 20·86	25 40 25·3	22·84
10	3 58 49·92	24 40 58·2	44·17	10	5 52 47·58	25 38 8·3	24·40
11	4 1 6·39	24 45 23·2	42·93	11	5 55 14·38	25 35 41·9	25·96
12	4 3 23·17	24 49 40·8	41·68	12	5 57 41·27	25 33 6·1	27·54
13	4 5 40·26	24 53 50·9	40·42	13	6 0 8·24	25 30 20·9	29·10
14	4 7 57·65	24 57 53·4	39·15	14	6 2 35·27	25 27 26·3	30·66
15	4 10 15·34	25 1 48·3	37·87	15	6 5 2·36	25 24 22·3	32·22
16	4 12 33·33	25 5 35·5	36·58	16	6 7 29·51	25 21 9·0	33·78
17	4 14 51·62	25 9 14·9	35·28	17	6 9 56·72	25 17 46·3	35·35
18	4 17 10·21	25 12 46·6	33·97	18	6 12 23·96	25 14 14·2	36·91
19	4 19 29·09	25 16 10·4	32·65	19	6 14 51·24	25 10 32·7	38·47
20	4 21 48·25	25 19 26·3	31·32	20	6 17 18·56	25 6 41·9	40·03
21	4 24 7·70	25 22 34·3	29·99	21	6 19 45·90	25 2 41·7	41·59
22	4 26 27·44	25 25 34·2	28·64	22	6 22 13·26	24 58 32·2	43·14
23	4 28 47·45	N.25 28 26·1	27·29	23	6 24 40·63	N.24 54 13·3	44·70
	TUESDAY 22.				*THURSDAY 24.*		
0	4 31 7·73	N.25 31 9·8	25·92	0	6 27 8·01	N.24 49 45·1	46·27
1	4 33 28·29	25 33 45·4	24·56	1	6 29 35·39	24 45 7·4	47·84
2	4 35 49·11	25 36 12·7	23·18	2	6 32 2·77	24 40 20·3	49·40
3	4 38 10·20	25 38 31·8	21·79	3	6 34 30·13	24 35 23·9	50·95
4	4 40 31·55	25 40 42·5	20·39	4	6 36 57·48	24 30 18·2	52·50
5	4 42 53·15	25 42 44·9	18·99	5	6 39 24·80	24 25 3·2	54·05
6	4 45 15·00	25 44 38·8	17·58	6	6 41 52·09	24 19 38·9	55·59
7	4 47 37·09	25 46 24·3	16·16	7	6 44 19·35	24 14 5·3	57·14
8	4 49 59·42	25 48 1·2	14·74	8	6 46 46·57	24 8 22·5	58·68
9	4 52 21·99	25 49 29·7	13·30	9	6 49 13·74	24 2 30·4	60·21
10	4 54 44·79	25 50 49·5	11·86	10	6 51 40·86	23 56 29·2	61·74
11	4 57 7·82	25 52 0·7	10·41	11	6 54 7·92	23 50 18·7	63·26
12	4 59 31·07	25 53 3·1	8·96	12	6 56 34·92	23 43 59·1	64·78
13	5 1 54·53	25 53 56·9	7·50	13	6 59 1·85	23 37 30·4	66·30
14	5 4 18·21	25 54 41·9	6·03	14	7 1 28·71	23 30 52·6	67·81
15	5 6 42·09	25 55 18·0	4·55	15	7 3 55·49	23 24 5·7	69·32
16	5 9 6·18	25 55 45·4	3·07	16	7 6 22·18	23 17 9·8	70·82
17	5 11 30·46	25 56 3·8	1·59	17	7 8 48·79	23 10 4·9	72·31
18	5 13 54·93	25 56 13·3	0·10	18	7 11 15·30	23 2 51·0	73·80
19	5 16 19·58	25 56 13·9	1·40	19	7 13 41·71	22 55 28·3	75·28
20	5 18 44·41	25 56 5·5	2·90	20	7 16 8·02	22 47 56·6	76·75
21	5 21 9·42	25 55 48·1	4·41	21	7 18 34·22	22 40 16·1	78·21
22	5 23 34·60	25 55 21·6	5·93	22	7 21 0·31	22 32 26·8	79·67
23	5 25 59·93	25 54 46·1	7·45	23	7 23 26·28	22 24 28·8	81·12
24	5 28 25·42	N.25 54 1·4		24	7 25 52·13	N.22 16 22·0	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 25.				*SUNDAY 27.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	7 25 52·13	N.22 16 22·0	82·57	0	9 19 15·82	N.13 16 38·8	138·57
1	7 28 17·85	22 8 6·6	84·00	1	9 21 32·96	13 2 47·4	139·39
2	7 30 43·45	21 59 42·6	85·43	2	9 23 49·92	12 48 51·0	140·20
3	7 33 8·91	21 51 10·0	86·85	3	9 26 6·70	12 34 49·8	141·00
4	7 35 34·23	21 42 28·9	88·26	4	9 28 23·30	12 20 43·8	141·77
5	7 37 59·41	21 33 39·3	89·66	5	9 30 39·72	12 6 33·2	142·53
6	7 40 24·45	21 24 41·3	91·05	6	9 32 55·96	11 52 18·0	143·28
7	7 42 49·34	21 15 35·0	92·43	7	9 35 12·03	11 37 58·3	144·01
8	7 45 14·08	21 6 20·4	93·80	8	9 37 27·93	11 23 34·2	144·72
9	7 47 38·66	20 56 57·6	95·17	9	9 39 43·66	11 9 5·9	145·41
10	7 50 3·09	20 47 26·6	96·52	10	9 41 59·22	10 54 33·4	146·09
11	7 52 27·35	20 37 47·5	97·86	11	9 44 14·62	10 39 56·9	146·75
12	7 54 51·45	20 28 0·3	99·19	12	9 46 29·85	10 25 16·3	147·40
13	7 57 15·38	20 18 5·2	100·51	13	9 48 44·93	10 10 31·9	148·03
14	7 59 39·15	20 8 2·1	101·82	14	9 50 59·84	9 55 43·7	148·65
15	8 2 2·74	19 57 51·2	103·12	15	9 53 14·60	9 40 51·8	149·25
16	8 4 26·16	19 47 32·4	104·41	16	9 55 29·21	9 25 56·3	149·83
17	8 6 49·40	19 37 6·0	105·68	17	9 57 43·67	9 10 57·3	150·39
18	8 9 12·46	19 26 31·9	106·94	18	9 59 57·98	8 55 55·0	150·94
19	8 11 35·34	19 15 50·3	108·19	19	10 2 12·15	8 40 49·4	151·47
20	8 13 58·04	19 5 1·1	109·43	20	10 4 26·18	8 25 40·6	151·98
21	8 16 20·56	18 54 4·5	110·66	21	10 6 40·07	8 10 28·7	152·48
22	8 18 42·89	18 43 0·6	111·87	22	10 8 53·83	7 55 13·8	152·96
23	8 21 5·03	N.18 31 49·3	113·07	23	10 11 7·45	N. 7 39 56·1	153·42
	SATURDAY 26.				*MONDAY 28.*		
0	8 23 26·98	N.18 20 30·9	114·26	0	10 13 20·95	N. 7 24 35·6	153·86
1	8 25 48·74	18 9 5·3	115·44	1	10 15 34·32	7 9 12·4	154·30
2	8 28 10·32	17 57 32·7	116·61	2	10 17 47·57	6 53 46·6	154·71
3	8 30 31·70	17 45 53·0	117·76	3	10 20 0·70	6 38 18·4	155·11
4	8 32 52·88	17 34 6·5	118·89	4	10 22 13·71	6 22 47·7	155·49
5	8 35 13·87	17 22 13·1	120·01	5	10 24 26·61	6 7 14·8	155·85
6	8 37 34·67	17 10 13·0	121·12	6	10 26 39·40	5 51 39·7	156·19
7	8 39 55·28	16 58 6·3	122·21	7	10 28 52·09	5 36 2·5	156·52
8	8 42 15·69	16 45 53·1	123·29	8	10 31 4·68	5 20 23·4	156·84
9	8 44 35·90	16 33 33·3	124·36	9	10 33 17·17	5 4 42·4	157·13
10	8 46 55·92	16 21 7·2	125·41	10	10 35 29·57	4 48 59·6	157·41
11	8 49 15·75	16 8 34·7	126·45	11	10 37 41·87	4 33 15·1	157·68
12	8 51 35·37	15 55 56·0	127·47	12	10 39 54·09	4 17 29·0	157·92
13	8 53 54·80	15 43 11·2	128·48	13	10 42 6·23	4 1 41·5	158·15
14	8 56 14·04	15 30 20·3	129·47	14	10 44 18·29	3 45 52·5	158·37
15	8 58 33·08	15 17 23·5	130·45	15	10 46 30·27	3 30 2·3	158·56
16	9 0 51·93	15 4 20·8	131·41	16	10 48 42·18	3 14 11·0	158·74
17	9 3 10·58	14 51 12·3	132·36	17	10 50 54·03	2 58 18·5	158·90
18	9 5 29·04	14 37 58·1	133·29	18	10 53 5·81	2 42 25·1	159·05
19	9 7 47·31	14 24 38·3	134·21	19	10 55 17·53	2 26 30·8	159·18
20	9 10 5·39	14 11 13·1	135·11	20	10 57 29·20	2 10 35·8	159·29
21	9 12 23·28	13 57 42·4	136·00	21	10 59 40·81	1 54 40·1	159·38
22	9 14 40·98	13 44 6·4	136·87	22	11 1 52·38	1 38 43·8	159·46
23	9 16 58·50	13 30 25·2	137·73	23	11 4 3·91	1 22 47·0	159·53
24	9 19 15·82	N.13 16 38·8		24	11 6 15·39	N. 1 6 49·8	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 29.		
	h m s	° ′ ″	″
0	11 6 15·39	N. 1 6 49·8	159·57
1	11 8 26·84	0 50 52·4	159·60
2	11 10 38·26	0 34 54·8	159·61
3	11 12 49·66	0 18 57·1	159·61
4	11 15 1·03	N. 0 2 59·5	159·59
5	11 17 12·38	S. 0 12 58·1	159·55
6	11 19 23·72	0 28 55·4	159·50
7	11 21 35·05	0 44 52·4	159·43
8	11 23 46·37	1 0 49·0	159·34
9	11 25 57·69	1 16 45·0	159·24
10	11 28 9·01	1 32 40·5	159·12
11	11 30 20·33	1 48 35·2	158·99
12	11 32 31·67	2 4 29·1	158·84
13	11 34 43·02	2 20 22·2	158·68
14	11 36 54·39	2 36 14·2	158·50
15	11 39 5·78	2 52 5·2	158·30
16	11 41 17·20	3 7 55·0	158·08
17	11 43 28·65	3 23 43·5	157·85
18	11 45 40·14	3 39 30·7	157·61
19	11 47 51·66	3 55 16·3	157·34
20	11 50 3·23	4 11 0·3	157·06
21	11 52 14·85	4 26 42·7	156·76
22	11 54 26·51	4 42 23·3	156·45
23	11 56 38·23	S. 4 58 2·0	156·13
	WEDNESDAY 30.		
0	11 58 50·01	S. 5 13 38·7	155·79
1	12 1 1·86	5 29 13·4	155·43
2	12 3 13·78	5 44 46·0	155·06
3	12 5 25·77	6 0 16·4	154·67
4	12 7 37·83	6 15 44·4	154·26
5	12 9 49·97	6 31 9·9	153·84
6	12 12 2·20	6 46 33·0	153·41
7	12 14 14·52	7 1 53·5	152·96
8	12 16 26·93	7 17 11·2	152·49
9	12 18 39·43	7 32 26·1	152·01
10	12 20 52·03	7 47 38·2	151·51
11	12 23 4·74	8 2 47·3	151·00
12	12 25 17·55	8 17 53·3	150·48
13	12 27 30·47	8 32 56·2	149·94
14	12 29 43·51	8 47 55·8	149·38
15	12 31 56·66	9 2 52·1	148·81
16	12 34 9·94	9 17 45·0	148·22
17	12 36 23·34	9 32 34·3	147·62
18	12 38 36·87	9 47 20·0	147·00
19	12 40 50·53	10 2 2·0	146·37
20	12 43 4·33	10 16 40·3	145·72
21	12 45 18·26	10 31 14·6	145·06
22	12 47 32·34	10 45 45·0	144·39
23	12 49 46·56	11 0 11·4	143·70
24	12 52 0·93	S. 11 14 33·5	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 31.		
	h m s	° ′ ″	″
0	12 52 0·93	S. 11 14 33·5	142·99
1	12 54 15·45	11 28 51·4	142·27
2	12 56 30·13	11 43 5·1	141·54
3	12 58 44·96	11 57 14·3	140·79
4	13 0 59·96	12 11 19·1	140·03
5	13 3 15·11	12 25 19·2	139·25
6	13 5 30·44	12 39 14·7	138·45
7	13 7 45·93	12 53 5·5	137·65
8	13 10 1·60	13 6 51·4	136·83
9	13 12 17·44	13 20 32·4	135·99
10	13 14 33·46	13 34 8·3	135·14
11	13 16 49·66	13 47 39·2	134·28
12	13 19 6·04	14 1 4·9	133·41
13	13 21 22·60	14 14 25·4	132·52
14	13 23 39·35	14 27 40·5	131·62
15	13 25 56·29	14 40 50·2	130·70
16	13 28 13·42	14 53 54·4	129·77
17	13 30 30·74	15 6 53·1	128·83
18	13 32 48·26	15 19 46·0	127·87
19	13 35 5·98	15 32 33·2	126·90
20	13 37 23·89	15 45 14·6	125·91
21	13 39 42·00	15 57 50·1	124·91
22	13 42 0·32	16 10 19·6	123·90
23	13 44 18·83	S. 16 22 43·0	122·88
	FRIDAY, FEB. 1.		
0	13 46 37·55	S. 16 35 0·2	

PHASES OF THE MOON.

	d h m
☾ *Last Quarter* -	3 13 53·8
● New Moon - -	10 15 27·1
☽ *First Quarter* -	18 16 0·0
○ Full Moon - -	26 5 6·5

	d h
☾ Perigee - - - - - -	2 8
☾ Apogee - - - - - -	17 5
☾ Perigee - - - - - -	28 23

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LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	*Noon.*	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Aldebaran W.	88 57 42	2348	90 42 31	2347	92 27 22	2347	94 12 13	2346
	Pollux W.	46 56 16	2344	48 41 12	2340	50 26 13	2337	52 11 19	2333
	Spica E.	44 42 35	2307	42 56 45	2307	41 10 56	2307	39 25 6	2308
	Antares E.	90 21 34	2293	88 35 24	2292	86 49 13	2291	85 3 0	2290
	Venus E.	92 25 37	2705	90 49 4	2704	89 12 30	2703	87 35 54	2702
	Sun E.	123 53 26	2617	122 14 54	2616	120 36 21	2615	118 57 46	2613
2	Pollux W.	60 57 43	2325	62 43 6	2324	64 28 31	2324	66 13 56	2323
	Jupiter W.	25 35 13	2319	27 20 45	2314	29 6 24	2309	30 52 10	2306
	Antares E.	76 11 43	2289	74 25 28	2289	72 39 13	2289	70 52 58	2291
	Venus E.	79 32 41	2701	77 56 2	2701	76 19 23	2701	74 42 45	2702
	Sun E.	110 44 37	2612	109 5 59	2612	107 27 21	2613	105 48 44	2614
3	Pollux W.	75 1 3	2325	76 46 26	2326	78 31 48	2327	80 17 8	2328
	Jupiter W.	39 41 57	2297	41 28 1	2298	43 14 4	2297	45 0 8	2298
	Regulus W.	37 59 44	2315	39 45 21	2315	41 30 58	2315	43 16 35	2316
	Saturn W.	27 3 4	2383	28 47 3	2374	30 31 15	2367	32 15 37	2361
	Antares E.	62 2 4	2296	60 15 58	2297	58 29 54	2298	56 43 52	2300
	Venus E.	66 39 54	2708	65 3 25	2710	63 26 59	2712	61 50 35	2714
	Sun E.	97 35 54	2619	95 57 25	2621	94 18 58	2622	92 40 33	2624
4	Jupiter W.	53 50 14	2302	55 36 11	2303	57 22 6	2305	59 7 58	2307
	Regulus W.	52 4 21	2322	53 49 48	2323	55 35 14	2326	57 20 36	2327
	Saturn W.	40 59 2	2347	42 43 53	2346	44 28 46	2346	46 13 38	2346
	Antares E.	47 54 23	2310	46 8 38	2312	44 22 56	2315	42 37 18	2317
	Venus E.	53 49 23	2727	52 13 19	2730	50 37 19	2733	49 1 23	2738
	Sun E.	84 29 5	2634	82 50 56	2637	81 12 51	2638	79 34 48	2642
5	Jupiter W.	67 56 35	2318	69 42 9	2321	71 27 38	2324	73 13 3	2326
	Regulus W.	66 6 42	2339	67 51 45	2342	69 36 43	2345	71 21 37	2348
	Saturn W.	54 57 53	2351	56 42 39	2353	58 27 22	2355	60 12 2	2357
	Venus E.	41 3 3	2759	39 27 41	2763	37 52 25	2769	36 17 16	2775
	Sun E.	71 25 32	2656	69 47 53	2659	68 10 18	2663	66 32 48	2666
6	Jupiter W.	81 59 1	2344	83 43 57	2347	85 28 48	2351	87 13 33	2356
	Regulus W.	80 4 55	2366	81 49 19	2369	83 33 38	2374	85 17 50	2378
	Saturn W.	68 54 30	2371	70 38 46	2375	72 22 57	2378	74 7 3	2382
	Spica W.	26 6 8	2391	27 49 55	2391	29 33 42	2393	31 17 27	2395
	Sun E.	58 26 32	2686	56 49 33	2690	55 12 40	2695	53 35 53	2700
7	Jupiter W.	95 55 41	2379	97 39 46	2384	99 23 43	2390	101 7 32	2396
	Saturn W.	82 46 3	2405	84 29 31	2410	86 12 52	2415	87 56 5	2421
	Spica W.	39 55 19	2410	41 38 39	2415	43 21 52	2419	45 4 59	2425
	Sun E.	45 33 37	2725	43 57 31	2731	42 21 33	2737	40 45 42	2744
13	Sun W.	27 44 25	3215	29 10 16	3227	30 35 53	3239	32 1 16	3251
	Mars E.	44 59 25	3129	43 31 51	3143	42 4 34	3157	40 37 33	3172
	α Arietis E.	74 31 21	2862	72 58 14	2874	71 25 22	2886	69 52 45	2897
	Aldebaran E.	107 0 22	2906	105 28 11	2917	103 56 14	2927	102 24 30	2938
14	Sun W.	39 4 45	3308	40 28 47	3319	41 52 37	3329	43 16 15	3339
	Mars E.	33 26 46	3244	32 1 29	3259	30 36 30	3276	29 11 50	3292
	α Arietis E.	62 13 12	2951	60 41 58	2962	59 10 57	2973	57 40 10	2982
	Aldebaran E.	94 49 4	2988	93 18 36	2998	91 48 20	3007	90 18 16	3017

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Aldebaran W.	95 57 6	2346	97 41 58	2346	99 26 51	2346	101 11 43	2347
	Pollux W.	53 56 30	2331	55 41 44	2329	57 27 1	2327	59 12 21	2326
	Spica E.	37 39 18	2308	35 53 31	2309	34 7 45	2312	32 22 3	2314
	Antares E.	83 16 46	2289	81 30 31	2289	79 44 15	2289	77 57 59	2289
	Venus E.	85 59 17	2701	84 22 39	2701	82 46 0	2701	81 9 21	2700
	Sun E.	117 19 9	2613	115 40 32	2613	114 1 54	2612	112 23 16	2612
2	Pollux W.	67 59 22	2323	69 44 48	2323	71 30 14	2324	73 15 39	2324
	Jupiter W.	32 38 1	2303	34 23 57	2301	36 9 55	2300	37 55 55	2298
	Antares E.	69 6 45	2291	67 20 32	2292	65 34 21	2293	63 48 12	2294
	Venus E.	73 6 8	2703	71 29 32	2704	69 52 58	2705	68 16 25	2707
	Sun E.	104 10 8	2614	102 31 32	2615	100 52 58	2616	99 14 25	2618
3	Pollux W.	82 2 26	2329	83 47 43	2332	85 32 56	2333	87 18 8	2335
	Jupiter W.	46 46 11	2298	48 32 14	2298	50 18 16	2300	52 4 16	2301
	Regulus W.	45 2 11	2317	46 47 45	2318	48 33 19	2319	50 18 51	2320
	Saturn W.	34 0 8	2357	35 44 45	2353	37 29 27	2350	39 14 13	2348
	Antares E.	54 57 53	2302	53 11 56	2304	51 26 2	2306	49 40 11	2308
	Venus E.	60 14 14	2716	58 37 56	2719	57 1 41	2722	55 25 30	2725
	Sun E.	91 2 10	2626	89 23 50	2627	87 45 32	2629	86 7 17	2632
4	Jupiter W.	60 53 48	2309	62 39 34	2311	64 25 18	2313	66 10 58	2315
	Regulus W.	59 5 56	2329	60 51 13	2332	62 36 26	2334	64 21 36	2337
	Saturn W.	47 58 31	2346	49 43 23	2346	51 28 15	2348	53 13 5	2349
	Antares E.	40 51 43	2319	39 6 12	2322	37 20 45	2326	35 35 23	2328
	Venus E.	47 25 33	2741	45 49 47	2745	44 14 7	2749	42 38 32	2753
	Sun E.	77 56 50	2644	76 18 54	2647	74 41 3	2649	73 3 15	2653
5	Jupiter W.	74 58 24	2329	76 43 41	2333	78 28 53	2337	80 13 59	2340
	Regulus W.	73 6 26	2351	74 51 11	2355	76 35 51	2358	78 20 26	2362
	Saturn W.	61 56 39	2359	63 41 13	2362	65 25 43	2365	67 10 8	2367
	Venus E.	34 42 15	2782	33 7 23	2789	31 32 40	2797	29 58 8	2805
	Sun E.	64 55 23	2669	63 18 2	2674	61 40 47	2678	60 3 37	2681
6	Jupiter W.	88 58 11	2360	90 42 44	2364	92 27 10	2369	94 11 29	2374
	Regulus W.	87 1 56	2383	88 45 55	2387	90 29 48	2392	92 13 34	2397
	Saturn W.	75 51 4	2387	77 34 58	2391	79 18 46	2395	81 2 28	2400
	Spica W.	33 1 9	2397	34 44 48	2400	36 28 23	2403	38 11 54	2407
	Sun E.	51 59 13	2704	50 22 38	2710	48 46 11	2714	47 9 50	2720
7	Jupiter W.	102 51 13	2402	104 34 45	2408	106 18 9	2414	108 1 23	2421
	Saturn W.	89 39 9	2427	91 22 6	2433	93 4 54	2439	94 47 33	2445
	Spica W.	46 47 58	2429	48 30 51	2435	50 13 35	2441	51 56 12	2447
	Sun E.	39 10 0	2750	37 34 26	2757	35 59 1	2763	34 23 45	2770
13	Sun W.	33 26 25	3263	34 51 20	3275	36 16 1	3286	37 40 29	3296
	Mars E.	39 10 50	3185	37 44 23	3199	36 18 13	3214	34 52 21	3229
	α Arietis E.	68 20 22	2909	66 48 14	2919	65 16 19	2931	63 44 39	2941
	Aldebaran E.	100 52 59	2948	99 21 41	2958	97 50 36	2969	96 19 44	2978
14	Sun W.	44 39 41	3349	46 2 56	3359	47 25 59	3368	48 48 52	3377
	Mars E.	27 47 29	3310	26 23 29	3328	24 59 50	3347	23 36 33	3371
	α Arietis E.	56 9 34	2993	54 39 12	3002	53 9 1	3011	51 39 2	3021
	Aldebaran E.	88 48 24	3025	87 18 42	3034	85 49 12	3043	84 19 53	3052

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
15	Sun W.	50 11 35	3385	51 34 9	3394	52 56 32	3401	54 18 47	3409
	α Arietis E.	50 9 15	3029	48 39 38	3038	47 10 13	3047	45 40 58	3056
	Aldebaran E.	82 50 45	3060	81 21 46	3068	79 52 57	3076	78 24 18	3083
16	Sun W.	61 8 2	3440	62 29 33	3445	63 50 58	3449	65 12 19	3454
	Fomalhaut W.	36 1 48	4476	37 6 1	4385	38 11 36	4303	39 18 26	4230
	α Arietis E.	38 17 15	3094	36 48 58	3102	35 20 51	3110	33 52 53	3117
	Aldebaran E.	71 3 12	3117	69 35 23	3122	68 7 40	3128	66 40 4	3133
17	Sun W.	71 58 3	3466	73 19 5	3468	74 40 5	3467	76 1 6	3468
	Fomalhaut W.	45 7 51	3955	46 20 15	3914	47 33 21	3875	48 47 6	3840
	Aldebaran E.	59 23 30	3154	57 56 26	3157	56 29 26	3160	55 2 29	3164
	Pollux E.	101 14 3	3105	99 46 0	3107	98 17 59	3106	96 49 57	3106
18	Sun W.	82 46 19	3459	84 7 29	3456	85 28 42	3453	86 49 59	3448
	Fomalhaut W.	55 4 12	3695	56 21 4	3670	57 38 23	3648	58 56 6	3626
	α Pegasi W.	32 8 17	3622	33 26 27	3578	34 45 25	3538	36 5 7	3502
	Aldebaran E.	47 48 38	3176	46 22 0	3178	44 55 25	3181	43 28 53	3184
	Pollux E.	89 29 35	3098	88 1 23	3096	86 33 8	3092	85 4 49	3088
19	Sun W.	93 37 54	3418	94 59 50	3410	96 21 55	3401	97 44 10	3394
	Fomalhaut W.	65 30 20	3527	66 50 14	3509	68 10 28	3492	69 31 1	3474
	α Pegasi W.	42 52 49	3357	44 15 55	3333	45 39 29	3310	47 3 29	3288
	Mars W.	23 37 5	3396	24 59 26	3378	26 22 8	3361	27 45 9	3345
	Pollux E.	77 41 50	3062	76 12 54	3055	74 43 49	3048	73 14 36	3041
	Jupiter E.	111 29 40	3004	109 59 32	2997	108 29 15	2989	106 58 48	2981
20	Sun W.	104 38 0	3342	106 1 23	3331	107 24 58	3319	108 48 48	3307
	Fomalhaut W.	76 18 28	3393	77 40 52	3378	79 3 34	3363	80 26 33	3347
	α Pegasi W.	54 9 36	3188	55 35 59	3169	57 2 45	3152	58 29 52	3134
	Mars W.	34 44 43	3270	36 9 30	3255	37 34 34	3240	38 59 56	3225
	Pollux E.	65 46 4	2997	64 15 48	2988	62 45 20	2978	61 14 40	2967
	Jupiter E.	99 23 52	2934	97 52 16	2923	96 20 26	2912	94 48 22	2901
21	Sun W.	115 51 42	3238	117 17 6	3224	118 42 47	3208	120 8 47	3193
	α Pegasi W.	65 50 56	3044	67 20 14	3027	68 49 53	3009	70 19 55	2992
	Mars W.	46 11 13	3148	47 38 24	3133	49 5 54	3116	50 33 44	3100
	Pollux E.	53 37 55	2912	52 5 51	2900	50 33 32	2888	49 0 58	2877
	Jupiter E.	87 4 14	2838	85 30 35	2824	83 56 38	2811	82 22 24	2796
	Regulus E.	90 25 2	2875	88 52 11	2862	87 19 3	2848	85 45 38	2834
	Saturn E.	100 57 36	2870	99 24 38	2856	97 51 23	2841	96 17 49	2827
22	Sun W.	127 23 27	3111	128 51 23	3095	130 19 39	3078	131 48 16	3061
	α Pegasi W.	77 55 30	2905	79 27 43	2887	81 0 18	2870	82 33 15	2854
	Mars W.	57 57 56	3016	59 27 49	2998	60 58 4	2981	62 28 41	2964
	Pollux E.	41 14 21	2818	39 40 16	2807	38 5 57	2796	36 31 24	2787
	Jupiter E.	74 26 27	2722	72 50 17	2706	71 13 45	2691	69 36 53	2675
	Regulus E.	77 53 46	2759	76 18 25	2743	74 42 42	2728	73 6 40	2712
	Saturn E.	88 25 13	2753	86 49 43	2736	85 13 51	2721	83 37 39	2705
23	Mars W.	70 7 16	2875	71 40 7	2857	73 13 21	2840	74 46 57	2821
	α Arietis W.	47 24 18	2649	49 2 6	2632	50 40 18	2614	52 18 54	2596
	Jupiter E.	61 27 14	2596	59 48 13	2580	58 8 50	2564	56 29 6	2548
	Regulus E.	65 1 6	2632	63 22 54	2615	61 44 20	2599	60 5 23	2583

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
15	Sun	W.	55 40 53	3416	57 2 51	3423	58 24 42	3430	59 46 25	3435
	α Arietis	E.	44 11 54	3064	42 43 0	3071	41 14 15	3079	39 45 40	3087
	Aldebaran	E.	76 55 48	3091	75 27 27	3097	73 59 14	3104	72 31 9	3110
16	Sun	W.	66 33 34	3457	67 54 46	3461	69 15 54	3463	70 37 0	3465
	Fomalhaut	W.	40 26 24	4164	41 35 24	4105	42 45 21	4050	43 56 12	4001
	α Arietis	E.	32 25 4	3125	30 57 25	3132	29 29 54	3141	28 2 34	3149
	Aldebaran	E.	65 12 34	3138	63 45 10	3143	62 17 52	3146	60 50 38	3151
17	Sun	W.	77 22 6	3467	78 43 7	3466	80 4 9	3464	81 25 13	3462
	Fomalhaut	W.	50 1 27	3807	51 16 22	3776	52 31 49	3747	53 47 46	3720
	Aldebaran	E.	53 35 37	3166	52 8 47	3169	50 42 1	3172	49 15 18	3174
	Pollux	E.	95 21 55	3106	93 53 53	3105	92 25 49	3103	90 57 43	3101
18	Sun	W.	88 11 22	3443	89 32 50	3438	90 54 24	3431	92 16 5	3424
	Fomalhaut	W.	60 14 12	3604	61 32 42	3585	62 51 33	3565	64 10 46	3545
	α Pegasi	W.	37 25 29	3468	38 46 29	3437	40 8 4	3408	41 30 11	3381
	Aldebaran	E.	42 2 25	3186	40 35 59	3189	39 9 37	3193	37 43 20	3197
	Pollux	E.	83 36 25	3084	82 7 56	3079	80 39 21	3074	79 10 39	3068
19	Sun	W.	99 6 34	3385	100 29 8	3374	101 51 54	3365	103 14 51	3354
	Fomalhaut	W.	70 51 54	3458	72 13 5	3442	73 34 34	3425	74 56 22	3409
	α Pegasi	W.	48 27 55	3267	49 52 45	3247	51 17 59	3227	52 43 36	3208
	Mars	W.	29 8 29	3330	30 32 6	3314	31 56 1	3299	33 20 14	3285
	Pollux	E.	71 45 14	3033	70 15 42	3025	68 46 0	3017	67 16 8	3007
	Jupiter	E.	105 28 12	2972	103 57 24	2964	102 26 26	2954	100 55 15	2944
20	Sun	W.	110 12 51	3294	111 37 10	3280	113 1 45	3267	114 26 35	3253
	Fomalhaut	W.	81 49 50	3332	83 13 24	3317	84 37 16	3303	86 1 24	3288
	α Pegasi	W.	59 57 21	3115	61 25 12	3097	62 53 25	3079	64 22 0	3062
	Mars	W.	40 25 35	3210	41 51 32	3195	43 17 47	3179	44 44 21	3164
	Pollux	E.	59 43 46	2957	58 12 39	2946	56 41 19	2935	55 9 44	2924
	Jupiter	E.	93 16 4	2888	91 43 30	2876	90 10 41	2864	88 37 36	2851
21	Sun	W.	121 35 4	3177	123 1 41	3161	124 28 37	3145	125 55 52	3128
	α Pegasi	W.	71 50 18	2974	73 21 3	2957	74 52 10	2939	76 23 39	2922
	Mars	W.	52 1 53	3083	53 30 23	3067	54 59 13	3050	56 28 24	3033
	Pollux	E.	47 28 9	2865	45 55 5	2852	44 21 45	2841	42 48 10	283c
	Jupiter	E.	80 47 51	2782	79 12 59	2767	77 37 48	2753	76 2 18	2737
	Regulus	E.	84 11 54	2819	82 37 51	2805	81 3 29	2790	79 28 48	2774
	Saturn	E.	94 43 56	2813	93 9 45	2798	91 35 14	2783	90 0 24	2767
22	Sun	W.	133 17 14	3043	134 46 34	3026	136 16 15	3008	137 46 18	299c
	α Pegasi	W.	84 6 33	2836	85 40 14	2819	87 14 17	2803	88 48 41	278(
	Mars	W.	63 59 39	2946	65 31 0	2928	67 2 43	2911	68 34 48	289
	Pollux	E.	34 56 39	2777	33 21 41	2769	31 46 33	2763	30 11 16	275
	Jupiter	E.	67 59 40	2660	66 22 6	2643	64 44 10	2628	63 5 53	261
	Regulus	E.	71 30 16	2696	69 53 31	2680	68 16 24	2664	66 38 56	264
	Saturn	E.	82 1 6	2689	80 24 11	2673	78 46 55	2657	77 9 17	264
23	Mars	W.	76 20 57	2804	77 55 19	2787	79 30 4	2770	81 5 11	275
	α Arietis	W.	53 57 54	2579	55 37 18	2561	57 17 6	2545	58 57 17	252
	Jupiter	E.	54 48 59	2532	53 8 31	2517	51 27 41	2501	49 46 29	248
	Regulus	E.	58 26 5	2567	56 46 25	2551	55 6 23	2535	53 25 59	252

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
23	Saturn	E.	75 31 18	2625	73 52 57	2609	72 14 14	2593	70 35 9	2577
24	Mars	W.	82 40 42	2736	84 16 34	2718	85 52 50	2702	87 29 27	2686
	α Arietis	W.	60 37 52	2511	62 18 50	2495	64 0 11	2479	65 41 54	2462
	Aldebaran	W.	29 7 5	2726	30 43 10	2688	32 20 6	2653	33 57 49	2621
	Jupiter	E.	48 4 56	2471	46 23 2	2456	44 40 47	2442	42 58 12	2427
	Regulus	E.	51 45 14	2504	50 4 7	2489	48 22 39	2474	46 40 50	2460
	Saturn	E.	62 14 18	2499	60 33 3	2484	58 51 28	2470	57 9 32	2455
25	Mars	W.	95 37 56	2608	97 16 40	2593	98 55 44	2580	100 35 7	2566
	α Arietis	W.	74 16 4	2387	75 59 58	2373	77 44 11	2359	79 28 45	2346
	Aldebaran	W.	42 16 16	2492	43 57 40	2470	45 39 35	2451	47 21 57	2432
	Jupiter	E.	34 20 26	2364	32 36 0	2354	30 51 19	2344	29 6 24	2335
	Regulus	E.	38 6 43	2393	36 22 58	2380	34 38 55	2369	32 54 36	2359
	Saturn	E.	48 34 58	2389	46 51 8	2378	45 7 2	2367	43 22 39	2357
26	Mars	W.	108 56 33	2504	110 37 40	2494	112 19 2	2484	114 0 38	2474
	α Arietis	W.	88 16 12	2285	90 2 33	2275	91 49 9	2264	93 36 1	2255
	Aldebaran	W.	56 0 10	2351	57 44 56	2337	59 30 2	2324	61 15 27	2312
	Saturn	E.	34 37 31	2319	32 52 0	2315	31 6 23	2313	29 20 43	2314
	Spica	E.	78 5 28	2277	76 18 55	2267	74 32 7	2257	72 45 4	2247
27	Aldebaran	W.	70 6 38	2261	71 53 35	2253	73 40 43	2246	75 28 2	2240
	Pollux	W.	28 10 46	2320	29 56 16	2301	31 42 14	2284	33 28 37	2270
	Spica	E.	63 46 30	2208	61 58 14	2201	60 9 47	2195	58 21 12	2190
	Antares	E.	109 28 12	2199	107 39 43	2192	105 51 4	2186	104 2 16	2181
28	Aldebaran	W.	84 26 43	2217	86 14 46	2214	88 2 52	2212	89 51 2	2211
	Pollux	W.	42 25 3	2221	44 12 59	2215	46 1 5	2209	47 49 19	2205
	Spica	E.	49 16 37	2173	47 27 29	2171	45 38 18	2170	43 49 5	2170
	Antares	E.	94 56 25	2161	93 6 59	2159	91 17 29	2157	89 27 56	2155
29	Pollux	W.	56 51 41	2195	58 40 16	2196	60 28 50	2196	62 17 24	2198
	Jupiter	W.	24 8 52	2172	25 58 1	2166	27 47 19	2163	29 36 42	2162
	Spica	E.	34 43 13	2178	32 54 12	2182	31 5 17	2186	29 16 29	2192
	Antares	E.	80 19 57	2156	78 30 23	2158	76 40 52	2160	74 51 24	2163
	Venus	E.	116 58 11	2540	115 17 54	2542	113 37 39	2544	111 57 27	2547
30	Pollux	W.	71 19 26	2212	73 7 36	2216	74 55 40	2221	76 43 36	2226
	Jupiter	W.	38 43 47	2166	40 33 6	2169	42 22 20	2173	44 11 28	2177
	Regulus	W.	34 17 40	2205	36 6 0	2208	37 54 16	2212	39 42 26	2215
	Antares	E.	65 45 15	2181	63 56 19	2186	62 7 30	2192	60 18 50	2197
	Venus	E.	103 37 36	2567	101 57 55	2572	100 18 22	2578	98 38 57	2583
	Sun	E.	128 40 2	2497	126 58 44	2501	125 17 32	2507	123 36 28	2513
31	Pollux	W.	85 41 15	2256	87 28 19	2264	89 15 12	2271	91 1 54	2279
	Jupiter	W.	53 15 21	2204	55 3 43	2211	56 51 54	2217	58 39 56	2224
	Regulus	W.	48 41 36	2242	50 29 1	2249	52 16 16	2255	54 3 21	2262
	Saturn	W.	38 57 47	2259	40 44 47	2262	42 31 42	2266	44 18 31	2271
	Antares	E.	51 17 41	2229	49 29 56	2237	47 42 23	2243	45 55 0	2251
	Venus	E.	90 24 2	2618	88 45 32	2626	87 7 13	2635	85 29 5	2643
	Sun	E.	115 13 23	2547	113 33 15	2555	111 53 18	2563	110 13 32	2571

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
23	Saturn	E.	68 55 42	2561	67 15 53	2546	65 35 43	2530	63 55 11	2514
24	Mars	W.	89 6 26	2669	90 43 47	2654	92 21 29	2638	93 59 32	2623
	α Arietis	W.	67 24 1	2447	69 6 29	2431	70 49 19	2416	72 32 31	2401
	Aldebaran	W.	35 36 15	2592	37 15 21	2564	38 55 5	2539	40 35 24	2515
	Jupiter	E.	41 15 16	2414	39 32 1	2401	37 48 28	2388	36 4 36	2375
	Regulus	E.	44 58 40	2445	43 16 10	2431	41 33 20	2418	39 50 11	2405
	Saturn	E.	55 27 15	2441	53 44 39	2428	52 1 44	2415	50 18 30	2402
25	Mars	W.	102 14 48	2552	103 54 49	2540	105 35 6	2527	107 15 41	2515
	α Arietis	W.	81 13 38	2333	82 58 50	2320	84 44 20	2309	86 30 7	2296
	Aldebaran	W.	49 4 47	2414	50 48 2	2396	52 31 42	2380	54 15 45	2365
	Jupiter	E.	27 21 15	2328	25 35 57	2322	23 50 30	2319	22 4 58	2317
	Regulus	E.	31 10 2	2349	29 25 13	2340	27 40 12	2333	25 55 0	2326
	Saturn	E.	41 38 3	2347	39 53 12	2339	38 8 9	2331	36 22 55	2324
26	Mars	W.	115 42 28	2465	117 24 31	2456	119 6 46	2448	120 49 12	2441
	α Arietis	W.	95 23 7	2246	97 10 26	2238	98 57 57	2229	100 45 41	2222
	Aldebaran	W.	63 1 9	2300	64 47 9	2289	66 33 24	2279	68 19 54	2270
	Saturn	E.	27 35 4	2316	25 49 28	2322	24 4 1	2333	22 18 50	2346
	Spica	E.	70 57 47	2238	69 10 16	2229	67 22 32	2222	65 34 37	2214
27	Aldebaran	W.	77 15 30	2234	79 3 8	2229	80 50 53	2224	82 38 45	2220
	Pollux	W.	35 15 21	2257	37 2 23	2246	38 49 43	2236	40 37 16	2227
	Spica	E.	56 32 30	2185	54 43 40	2181	52 54 44	2178	51 5 43	2175
	Antares	E.	102 13 20	2175	100 24 15	2171	98 35 4	2167	96 45 47	2164
28	Aldebaran	W.	91 39 13	2210	93 27 26	2210	95 15 39	2211	97 3 51	2212
	Pollux	W.	49 37 39	2201	51 26 5	2199	53 14 34	2197	55 3 7	2196
	Spica	E.	41 59 52	2170	40 10 39	2171	38 21 27	2173	36 32 18	2175
	Antares	E.	87 38 21	2155	85 48 45	2154	83 59 8	2155	82 9 32	2155
29	Pollux	W.	64 5 55	2199	65 54 24	2202	67 42 49	2204	69 31 10	2208
	Jupiter	W.	31 26 7	2161	33 15 34	2161	35 5 0	2162	36 54 25	2164
	Spica	E.	27 27 50	2199	25 39 21	2208	23 51 5	2217	22 3 3	2229
	Antares	E.	73 2 0	2165	71 12 40	2169	69 23 26	2173	67 34 17	2177
	Venus	E.	110 17 19	2550	108 37 15	2553	106 57 16	2558	105 17 23	2562
30	Pollux	W.	78 31 25	2231	80 19 6	2237	82 6 39	2243	83 54 2	2250
	Jupiter	W.	46 0 30	2182	47 49 25	2187	49 38 12	2192	51 26 51	2198
	Regulus	W.	41 30 31	2220	43 18 29	2225	45 6 20	2231	46 54 2	2236
	Antares	E.	58 30 17	2203	56 41 54	2209	54 53 40	2215	53 5 35	2222
	Venus	E.	96 59 39	2590	95 20 31	2597	93 41 32	2604	92 2 42	2611
	Sun	E.	121 55 33	2519	120 14 46	2526	118 34 9	2533	116 53 41	2540
31	Pollux	W.	92 48 25	2287	94 34 44	2294	96 20 52	2303	98 6 47	2311
	Jupiter	W.	60 27 48	2232	62 15 28	2239	64 2 58	2247	65 50 16	2254
	Regulus	W.	55 50 16	2270	57 37 0	2277	59 23 33	2285	61 9 55	2292
	Saturn	W.	46 5 13	2276	47 51 47	2282	49 38 13	2288	51 24 30	2295
	Antares	E.	44 7 49	2259	42 20 49	2267	40 34 1	2276	38 47 26	2283
	Venus	E.	83 51 8	2651	82 13 22	2660	80 35 48	2669	78 58 26	2678
	Sun	E.	108 33 57	2579	106 54 33	2588	105 15 21	2596	103 36 21	2606

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Day of the Month.	Airy's Day Numbers—For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of				Value of
	B	F	G	H	L
1	1·32658	1·65346	0·18350	1·33818	66·227
2	1·31985	1·65270	0·18455	1·33817	66·619
3	1·31305	1·65190	0·18559	1·33815	67·019
4	1·30616	1·65104	0·18662	1·33812	67·425
5	1·29919	1·65011	0·18765	1·33808	67·839
6	1·29215	1·64912	0·18867	1·33803	68·258
7	1·28503	1·64806	0·18968	1·33796	68·684
8	1·27782	1·64695	0·19069	1·33788	69·116
9	1·27055	1·64577	0·19169	1·33779	69·553
10	1·26320	1·64453	0·19268	1·33769	69·997
11	1·25577	1·64322	0·19366	1·33758	70·447
12	1·24828	1·64185	0·19463	1·33746	70·903
13	1·24071	1·64042	0·19559	1·33733	71·365
14	1·23306	1·63893	0·19654	1·33719	71·832
15	1·22535	1·63737	0·19749	1·33704	72·303
16	1·21756	1·63575	0·19844	1·33688	72·780
17	1·20971	1·63406	0·19937	1·33671	73·261
18	1·20179	1·63231	0·20029	1·33654	73·748
19	1·19380	1·63050	0·20119	1·33636	74·238
20	1·18575	1·62862	0·20209	1·33618	74·731
21	1·17764	1·62668	0·20298	1·33599	75·229
22	1·16947	1·62467	0·20387	1·33579	75·730
23	1·16124	1·62260	0·20474	1·33559	76·235
24	1·15295	1·62047	0·20560	1·33538	76·744
25	1·14461	1·61827	0·20645	1·33516	77·255
26	1·13622	1·61601	0·20729	1·33494	77·769
27	1·12779	1·61368	0·20812	1·33471	78·286
28	1·11931	1·61128	0·20895	1·33448	78·806
29	1·11079	1·60882	0·20977	1·33425	79·329
30	1·10223	1·60629	0·21057	1·33402	79·853
31	1·09363	1·60369	0·21135	1·33379	80·380
32	1·08499	1·60103	0·21213	1·33353	80·909

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Day of the Month.	Bessel's Day Numbers— For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of A	B	C	D	Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding $0^d.207409$. Days.	From Mean Noon of January 1. Day of the Year.	Fraction of the Year.*
					h m s			
1	−0·5784	+1·3016	+9·5130	−0·5070	5 14 39·98	285	0	·0000
2	0·6143	1·2999	9·5178	0·5071	5 10 44·07	286	1	·0027
3	0·6473	1·2981	9·5226	0·5072	5 6 48·16	287	2	·0055
4	−0·6778	+1·2961	+9·5274	−0·5074	5 2 52·25	288	3	·0082
5	0·7062	1·2940	9·5321	0·5077	4 58 56·34	289	4	·0110
6	0·7328	1·2918	9·5367	0·5081	4 55 0·42	290	5	·0137
7	−0·7577	+1·2894	+9·5412	−0·5086	4 51 4·51	291	6	·0164
8	0·7811	1·2868	9·5456	0·5091	4 47 8·60	292	7	·0192
9	0·8031	1·2841	9·5500	0·5097	4 43 12·69	293	8	·0219
10	−0·8240	+1·2812	+9·5544	−0·5104	4 39 16·77	294	9	·0246
11	0·8438	1·2782	9·5586	0·5111	4 35 20·86	295	10	·0274
12	0·8626	1·2751	9·5628	0·5119	4 31 24·95	296	11	·0301
13	−0·8805	+1·2717	+9·5669	−0·5128	4 27 29·04	297	12	·0329
14	0·8975	1·2682	9·5709	0·5137	4 23 33·13	298	13	·0356
15	0·9137	1·2645	9·5749	0·5147	4 19 37·22	299	14	·0383
16	−0·9293	+1·2607	+9·5789	−0·5157	4 15 41·31	300	15	·0411
17	0·9441	1·2567	9·5827	0·5168	4 11 45·39	301	16	·0438
18	0·9584	1·2525	9·5865	0·5180	4 7 49·48	302	17	·0465
19	−0·9720	+1·2482	+9·5902	−0·5192	4 3 53·57	303	18	·0493
20	0·9851	1·2436	9·5939	0·5204	3 59 57·66	304	19	·0520
21	0·9977	1·2389	9·5975	0·5217	3 56 1·75	305	20	·0548
22	−1·0098	+1·2340	+9·6010	−0·5230	3 52 5·84	306	21	·0575
23	1·0214	1·2289	9·6045	0·5243	3 48 9·93	307	22	·0602
24	1·0326	1·2236	9·6079	0·5256	3 44 14·02	308	23	·0630
25	−1·0433	+1·2180	+9·6113	−0·5270	3 40 18·11	309	24	·0657
26	1·0537	1·2123	9·6146	0·5284	3 36 22·20	310	25	·0684
27	1·0637	1·2064	9·6178	0·5298	3 32 26·28	311	26	·0712
28	−1·0733	+1·2002	+9·6210	−0·5313	3 28 30·37	312	27	·0739
29	1·0826	1·1939	9·6242	0·5327	3 24 34·46	313	28	·0767
30	1·0915	1·1873	9·6273	0·5342	3 20 38·55	314	29	·0794
31	1·1002	1·1804	9·6303	0·5357	3 16 42·64	315	30	·0821
32	−1·1085	+1·1733	+9·6333	−0·5371	3 12 46·73	316	31	·0849

* Add ·0031 if Fraction be required for the time t, see page 327.

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AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S *Apparent* Right Ascension.	Diff. for 1 hour.	THE SUN'S *Apparent* Declination.	Diff. for 1 hour.	Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, *to be added to Apparent Time.*	Diff. for 1 hour.
		h m s	s	° ′ ″	″	m s	m s	s
Frid.	1	21 0 39·02	10·159	S. 17 0 47·2	43·32	1 8·22	13 55·13	0·302
Sat.	2	21 4 42·83	10·126	16 43 27·5	44·05	1 8·10	14 2·37	0·268
Sun.	3	21 8 45·83	10·092	16 25 50·3	44·77	1 7·99	14 8·80	0·235
Mon.	4	21 12 48·04	10·059	16 7 55·9	45·47	1 7·87	14 14·44	0·201
Tues.	5	21 16 49·44	10·025	15 49 44·7	46·15	1 7·76	14 19·27	0·168
Wed.	6	21 20 50·05	9·992	15 31 17·2	46·81	1 7·64	14 23·31	0·135
Thur.	7	21 24 49·85	9·959	15 12 33·8	47·45	1 7·53	14 26·55	0·102
Frid.	8	21 28 48·86	9·926	14 53 35·0	48·07	1 7·41	14 29·00	0·069
Sat.	9	21 32 47·08	9·893	14 34 21·2	48·68	1 7·30	14 30·66	0·037
Sun.	10	21 36 44·52	9·860	14 14 52·8	49·27	1 7·19	14 31·54	0·004
Mon.	11	21 40 41·18	9·828	13 55 10·2	49·85	1 7·08	14 31·64	0·028
Tues.	12	21 44 37·06	9·796	13 35 13·9	50·40	1 6·97	14 30·97	0·060
Wed.	13	21 48 32·17	9·765	13 15 4·5	50·93	1 6·87	14 29·53	0·091
Thur.	14	21 52 26·53	9·733	12 54 42·2	51·44	1 6·76	14 27·34	0·123
Frid.	15	21 56 20·13	9·702	12 34 7·5	51·94	1 6·66	14 24·39	0·154
Sat.	16	22 0 12·98	9·672	12 13 20·9	52·42	1 6·55	14 20·70	0·184
Sun.	17	22 4 5·10	9·642	11 52 22·7	52·88	1 6·45	14 16·27	0·214
Mon.	18	22 7 56·51	9·613	11 31 13·5	53·33	1 6·35	14 11·14	0·243
Tues.	19	22 11 47·21	9·584	11 9 53·5	53·76	1 6·25	14 5·30	0·272
Wed.	20	22 15 37·23	9·556	10 48 23·2	54·17	1 6·16	13 58·78	0·300
Thur.	21	22 19 26·57	9·529	10 26 43·0	54·57	1 6·07	13 51·59	0·327
Frid.	22	22 23 15·26	9·503	10 4 53·4	54·95	1 5·98	13 43·74	0·353
Sat.	23	22 27 3·30	9·477	9 42 54·6	55·32	1 5·89	13 35·26	0·379
Sun.	24	22 30 50·74	9·452	9 20 46·9	55·67	1 5·80	13 26·17	0·404
Mon.	25	22 34 37·58	9·428	8 58 30·9	56·00	1 5·71	13 16·48	0·428
Tues.	26	22 38 23·84	9·405	8 36 7·0	56·32	1 5·63	13 6·22	0·451
Wed.	27	22 42 9·56	9·383	8 13 35·5	56·62	1 5·55	12 55·41	0·473
Thur.	28	22 45 54·75	9·361	7 50 56·6	56·90	1 5·47	12 44·07	0·494
Frid.	29	22 49 39·42		S. 7 28 10·9		1 5·39	12 32·22	

* *Mean* Time of the Semidiameter passing may be found by subtracting 0ˢ·18 from the *Sidereal* Time.

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AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S *Apparent* Right Ascension.	THE SUN'S *Apparent* Declination.	THE SUN'S Semidiam.*	Equation of Time, *to be subtracted from Mean Time.*	Sidereal Time.
		h m s	° ′ ″	′ ″	m s	h m s
Frid.	1	21 0 36·66	S. 17 0 57·2	16 15·8	13 55·06	20 46 41·60
Sat.	2	21 4 40·46	16 43 37·8	16 15·6	14 2·31	20 50 38·15
Sun.	3	21 8 43·45	16 26 0·9	16 15·4	14 8·74	20 54 34·71
Mon.	4	21 12 45·65	16 8 6·7	16 15·3	14 14·39	20 58 31·26
Tues.	5	21 16 47·05	15 49 55·7	16 15·1	14 19·23	21 2 27·82
Wed.	6	21 20 47·66	15 31 28·5	16 14·9	14 23·28	21 6 24·38
Thur.	7	21 24 47·46	15 12 45·3	16 14·7	14 26·52	21 10 20·93
Frid.	8	21 28 46·47	14 53 46·6	16 14·6	14 28·98	21 14 17·49
Sat.	9	21 32 44·69	14 34 33·0	16 14·4	14 30·65	21 18 14·04
Sun.	10	21 36 42·14	14 15 4·7	16 14·2	14 31·54	21 22 10·60
Mon.	11	21 40 38·80	13 55 22·2	16 14·0	14 31·65	21 26 7·15
Tues.	12	21 44 34·69	13 35 26·1	16 13·8	14 30·98	21 30 3·71
Wed.	13	21 48 29·82	13 15 16·8	16 13·6	14 29·55	21 34 0·26
Thur.	14	21 52 24·19	12 54 54·6	16 13·4	14 27·37	21 37 56·82
Frid.	15	21 56 17·80	12 34 20·0	16 13·2	14 24·42	21 41 53·37
Sat.	16	22 0 10·67	12 13 33·4	16 13·0	14 20·74	21 45 49·93
Sun.	17	22 4 2·81	11 52 35·3	16 12·8	14 16·33	21 49 46·48
Mon.	18	22 7 54·24	11 31 26·1	16 12·6	14 11·20	21 53 43·04
Tues.	19	22 11 44·96	11 10 6·1	16 12·4	14 5·36	21 57 39·59
Wed.	20	22 15 35·00	10 48 35·9	16 12·2	13 58·85	22 1 36·15
Thur.	21	22 19 24·37	10 26 55·7	16 12·0	13 51·67	22 5 32·70
Frid.	22	22 23 13·08	10 5 6·0	16 11·8	13 43·82	22 9 29·26
Sat.	23	22 27 1·15	9 43 7·1	16 11·5	13 35·35	22 13 25·81
Sun.	24	22 30 48·62	9 20 59·4	16 11·3	13 26·26	22 17 22·36
Mon.	25	22 34 35·49	8 58 43·4	16 11·0	13 16·58	22 21 18·92
Tues.	26	22 38 21·79	8 36 19·3	16 10·8	13 6·32	22 25 15·47
Wed.	27	22 42 7·54	8 13 47·7	16 10·6	12 55·51	22 29 12·03
Thur.	28	22 45 52·76	7 51 8·7	16 10·4	12 44·18	22 33 8·58
Frid.	29	22 49 37·46	S. 7 28 22·9	16 10·1	12 32·33	22 37 5·13

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

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MEAN TIME.

Day of the Month.	THE SUN'S *Apparent* Longitude. *Noon.*	THE SUN'S *Apparent* Latitude. *Noon.*	Logarithm of the Radius Vector of the Earth. *Noon.*	THE MOON'S Semidiameter. *Noon.*	THE MOON'S Semidiameter. *Midnight.*	THE MOON'S Horizontal Parallax. *Noon.*	THE MOON'S Horizontal Parallax. *Midnight.*
	° ′ ″	″		′ ″	′ ″	′ ″	′ ″
1	312 41 1·9	S. 0·78	9·9937508	16 11·8	16 8·2	59 18·4	59 4·9
2	313 41 52·5	0·75	9·9938223	16 4·2	16 0·2	58 50·5	58 35·6
3	314 42 42·3	0·69	9·9938956	15 56·0	15 51·8	58 20·4	58 5·0
4	315 43 31·2	0·61	9·9939707	15 47·6	15 43·4	57 49·5	57 34·1
5	316 44 19·1	0·51	9·9940474	15 39·2	15 35·0	57 18·8	57 3·6
6	317 45 6·0	0·39	9·9941256	15 30·9	15 26·9	56 48·6	56 33·8
7	318 45 51·7	0·24	9·9942051	15 22·9	15 18·9	56 19·2	56 4·7
8	319 46 36·3	S. 0·10	9·9942858	15 15·1	15 11·3	55 50·6	55 36·7
9	320 47 19·6	N. 0·03	9·9943676	15 7·6	15 4·2	55 23·3	55 10·5
10	321 48 1·6	0·15	9·9944505	15 0·8	14 57·7	54 58·4	54 47·0
11	322 48 42·2	0·26	9·9945345	14 54·9	14 52·3	54 36·6	54 27·3
12	323 49 21·3	0·34	9·9946196	14 50·2	14 48·4	54 19·3	54 12·8
13	324 49 58·7	0·40	9·9947058	14 47·1	14 46·3	54 7·9	54 5·0
14	325 50 34·5	0·42	9·9947932	14 46·0	14 46·3	54 4·0	54 5·2
15	326 51 8·5	0·42	9·9948817	14 47·2	14 48·8	54 8·6	54 14·4
16	327 51 40·7	0·39	9·9949715	14 51·1	14 54·1	54 22·7	54 33·6
17	328 52 11·0	0·33	9·9950627	14 57·7	15 2·1	54 47·0	55 2·9
18	329 52 39·5	0·25	9·9951554	15 7·1	15 12·7	55 21·2	55 41·8
19	330 53 6·1	0·14	9·9952496	15 18·9	15 25·7	56 4·6	56 29·3
20	331 53 30·8	N. 0·01	9·9953454	15 32·8	15 40·3	56 55·5	57 22·9
21	332 53 53·7	S. 0·12	9·9954430	15 48·0	15 55·7	57 50·9	58 19·1
22	333 54 14·6	0·25	9·9955424	16 3·2	16 10·4	58 46·7	59 13·2
23	334 54 33·6	0·37	9·9956436	16 17·2	16 23·2	59 37·9	60 0·1
24	335 54 50·9	0·48	9·9957468	16 28·5	16 32·7	60 19·3	60 34·8
25	336 55 6·5	0·57	9·9958518	16 35·9	16 37·8	60 46·3	60 53·5
26	337 55 20·3	0·63	9·9959585	16 38·6	16 38·1	60 56·3	60 54·5
27	338 55 32·4	0·67	9·9960670	16 36·5	16 33·8	60 48·6	60 38·7
28	339 55 42·9	0·67	9·9961772	16 30·2	16 25·7	60 25·5	60 9·2
29	340 55 51·9	S. 0·65	9·9962888	16 20·6	16 15·0	59 50·5	59 30·0

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MEAN TIME.

Day of the Week.	Day of the Month.	THE MOON'S Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.	Age. Noon.	Meridian Passage.
		° ′ ″	° ′ ″	° ′ ″	° ′ ″	d	h m
Frid.	1	210 40 27·8	217 45 43·9	S. 5 12 4·4	S. 5 4 17·2	21·4	17 38·4
Sat.	2	224 47 22·5	231 45 15·1	4 51 59·2	4 35 28·6	22·4	18 34·5
Sun.	3	238 39 18·1	245 29 31·4	4 15 6·8	3 51 17·2	23·4	19 32·2
Mon.	4	252 15 58·3	258 58 43·8	3 24 25·7	2 54 59·3	24·4	20 30·1
Tues.	5	265 37 54·7	272 13 38·3	2 23 25·9	1 50 14·4	25·4	21 26·5
Wed.	6	278 46 2·2	285 15 14·2	1 15 52·9	S. 0 40 50·6	26·4	22 20·0
Thur.	7	291 41 21·0	298 4 28·8	S. 0 5 34·8	N. 0 29 27·3	27·4	23 10·0
Frid.	8	304 24 43·4	310 42 10·2	N. 1 3 49·3	1 37 7·6	28·4	23 56·6
Sat.	9	316 56 54·2	323 9 0·5	2 8 58·9	2 39 2·8	29·4	☌
Sun.	10	329 18 34·7	335 25 43·7	3 7 0·7	3 32 36·1	0·7	0 40·3
Mon.	11	341 30 35·5	347 33 19·9	3 55 34·9	4 15 45·6	1·7	1 21·9
Tues.	12	353 34 8·5	359 33 15·7	4 32 58·2	4 47 5·1	2·7	2 2·5
Wed.	13	5 30 58·0	11 27 34·8	4 58 0·8	5 5 41·1	3·7	2 42·8
Thur.	14	17 23 27·6	23 19 1·4	5 10 3·2	5 11 5·8	4·7	3 23·8
Frid.	15	29 14 42·9	35 11 1·3	5 8 48·5	5 3 12·5	5·7	4 6·5
Sat.	16	41 8 28·4	47 7 37·6	4 54 19·0	4 42 10·7	6·7	4 51·6
Sun.	17	53 9 3·7	59 13 22·6	4 26 51·3	4 8 25·2	7·7	5 39·6
Mon.	18	65 21 11·0	71 33 5·0	3 46 58·6	3 22 39·0	8·7	6 30·7
Tues.	19	77 49 40·5	84 11 30·9	2 55 35·6	2 25 59·9	9·7	7 24·5
Wed.	20	90 39 7·3	97 12 56·4	1 54 7·2	1 20 14·9	10·7	8 19·9
Thur.	21	103 53 19·9	110 40 32·5	N. 0 44 44·7	N. 0 8 2·2	11·7	9 15·9
Frid.	22	117 34 41·1	124 35 42·5	S. 0 29 22·2	S. 1 6 55·0	12·7	10 11·2
Sat.	23	131 43 23·2	138 57 18·0	1 43 58·0	2 19 50·9	13·7	11 5·2
Sun.	24	146 16 50·1	153 41 10·8	2 53 50·8	3 25 15·5	14·7	11 58·0
Mon.	25	161 9 21·9	168 40 16·1	3 53 23·8	4 17 38·7	15·7	12 50·1
Tues.	26	176 12 41·1	183 45 21·6	4 37 28·2	4 52 28·2	16·7	13 42·4
Wed.	27	191 17 3·6	198 46 36·6	5 2 21·4	5 6 59·9	17·7	14 35·8
Thur.	28	206 12 57·6	213 35 12·7	5 6 25·0	5 0 44·1	18·7	15 31·1
Frid.	29	220 52 38·4	228 4 42·7	S. 4 50 12·9	S. 4 35 12·3	19·7	16 28·3

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 1.				*SUNDAY* 3.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	13 46 37·55	S. 16 35 0·2	121·84	0	15 41 34·37	S. 24 1 13·4	58·90
1	13 48 56·47	16 47 11·3	120·79	1	15 44 2·35	24 7 6·8	57·37
2	13 51 15·60	16 59 16·0	119·73	2	15 46 30·45	24 12 51·0	55·84
3	13 53 34·94	17 11 14·4	118·65	3	15 48 58·67	24 18 26·1	54·30
4	13 55 54·49	17 23 6·3	117·56	4	15 51 27·00	24 23 51·9	52·76
5	13 58 14·24	17 34 51·7	116·46	5	15 53 55·43	24 29 8·4	51·21
6	14 0 34·21	17 46 30·5	115·35	6	15 56 23·96	24 34 15·7	49·66
7	14 2 54·38	17 58 2·5	114·22	7	15 58 52·59	24 39 13·6	48·10
8	14 5 14·77	18 9 27·9	113·08	8	16 1 21·32	24 44 2·3	46·54
9	14 7 35·37	18 20 46·4	111·93	9	16 3 50·13	24 48 41·5	44·97
10	14 9 56·18	18 31 58·0	110·77	10	16 6 19·02	24 53 11·3	43·40
11	14 12 17·20	18 43 2·6	109·59	11	16 8 47·99	24 57 31·8	41·83
12	14 14 38·43	18 54 0·1	108·41	12	16 11 17·02	25 1 42·8	40·26
13	14 16 59·88	19 4 50·6	107·21	13	16 13 46·12	25 5 44·4	38·68
14	14 19 21·54	19 15 33·8	106·00	14	16 16 15·28	25 9 36·4	37·10
15	14 21 43·41	19 26 9·8	104·78	15	16 18 44·49	25 13 19·0	35·51
16	14 24 5·49	19 36 38·5	103·54	16	16 21 13·74	25 16 52·1	33·92
17	14 26 27·79	19 46 59·8	102·30	17	16 23 43·03	25 20 15·6	32·33
18	14 28 50·29	19 57 13·6	101·04	18	16 26 12·36	25 23 29·6	30·74
19	14 31 13·00	20 7 19·8	99·78	19	16 28 41·72	25 26 34·1	29·15
20	14 33 35·92	20 17 18·5	98·50	20	16 31 11·10	25 29 29·0	27·56
21	14 35 59·04	20 27 9·5	97·21	21	16 33 40·49	25 32 14·3	25·96
22	14 38 22·37	20 36 52·8	95·91	22	16 36 9·89	25 34 50·1	24·36
23	14 40 45·91	S. 20 46 28·3	94·60	23	16 38 39·30	S. 25 37 16·2	22·76
	SATURDAY 2.				*MONDAY* 4.		
0	14 43 9·65	S. 20 55 55·9	93·28	0	16 41 8·70	S. 25 39 32·8	21·17
1	14 45 33·59	21 5 15·6	91·95	1	16 43 38·09	25 41 39·8	19·57
2	14 47 57·73	21 14 27·3	90·61	2	16 46 7·47	25 43 37·2	17·97
3	14 50 22·07	21 23 31·0	89·26	3	16 48 36·82	25 45 25·1	16·37
4	14 52 46·60	21 32 26·5	87·90	4	16 51 6·15	25 47 3·3	14·78
5	14 55 11·33	21 41 14·0	86·53	5	16 53 35·44	25 48 32·0	13·18
6	14 57 36·25	21 49 53·1	85·15	6	16 56 4·69	25 49 51·1	11·59
7	15 0 1·36	21 58 24·1	83·76	7	16 58 33·89	25 51 0·6	9·99
8	15 2 26·66	22 6 46·7	82·37	8	17 1 3·03	25 52 0·5	8·40
9	15 4 52·14	22 15 0·9	80·96	9	17 3 32·11	25 52 50·9	6·81
10	15 7 17·81	22 23 6·6	79·54	10	17 6 1·12	25 53 31·8	5·22
11	15 9 43·65	22 31 3·9	78·12	11	17 8 30·06	25 54 3·1	3·63
12	15 12 9·67	22 38 52·6	76·69	12	17 10 58·92	25 54 24·9	2·05
13	15 14 35·86	22 46 32·7	75·25	13	17 13 27·69	25 54 37·2	0·47
14	15 17 2·22	22 54 4·2	73·80	14	17 15 56·37	25 54 40·0	1·11
15	15 19 28·75	23 1 27·0	72·34	15	17 18 24·95	25 54 33·3	2·68
16	15 21 55·44	23 8 41·1	70·88	16	17 20 53·42	25 54 17·2	4·25
17	15 24 22·29	23 15 46·4	69·41	17	17 23 21·78	25 53 51·7	5·82
18	15 26 49·30	23 22 42·8	67·93	18	17 25 50·01	25 53 16·8	7·38
19	15 29 16·46	23 29 30·4	66·44	19	17 28 18·12	25 52 32·5	8·94
20	15 31 43·76	23 36 9·0	64·94	20	17 30 46·10	25 51 38·9	10·49
21	15 34 11·21	23 42 38·7	63·44	21	17 33 13·94	25 50 36·0	12·04
22	15 36 38·80	23 48 59·3	61·93	22	17 35 41·64	25 49 23·7	13·58
23	15 39 6·52	23 55 10·9	60·42	23	17 38 9·18	25 48 2·2	15·12
24	15 41 34·37	S. 24 1 13·4		24	17 40 36·57	S. 25 46 31·5	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 1ᵐ.	Hour.	Right Ascension.	Declination.	Diff. Dec for 1ᵐ.
	TUESDAY 5.				*THURSDAY 7.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	17 40 36·57	S. 25 46 31·5	16·65	0	19 33 49·36	S. 21 48 4·7	80·30
1	17 43 3·80	25 44 51·6	18·18	1	19 36 3·52	21 40 2·9	81·37
2	17 45 30·86	25 43 2·5	19·70	2	19 38 17·35	21 31 54·6	82·43
3	17 47 57·74	25 41 4·3	21·21	3	19 40 30·83	21 23 40·1	83·47
4	17 50 24·44	25 38 57·0	22·72	4	19 42 43·98	21 15 19·3	84·50
5	17 52 50·95	25 36 40·7	24·23	5	19 44 56·79	21 6 52·3	85·51
6	17 55 17·27	25 34 15·3	25·72	6	19 47 9·27	20 58 19·2	86·52
7	17 57 43·40	25 31 41·0	27·21	7	19 49 21·40	20 49 40·0	87·51
8	18 0 9·33	25 28 57·7	28·69	8	19 51 33·20	20 40 55·0	88·49
9	18 2 35·04	25 26 5·5	30·17	9	19 53 44·65	20 32 4·0	89·46
10	18 5 0·54	25 23 4·5	31·63	10	19 55 55·77	20 23 7·2	90·42
11	18 7 25·82	25 19 54·7	33·09	11	19 58 6·55	20 14 4·7	91·36
12	18 9 50·88	25 16 36·2	34·55	12	20 0 16·99	20 4 56·5	92·30
13	18 12 15·71	25 13 8·9	35·99	13	20 2 27·09	19 55 42·7	93·22
14	18 14 40·31	25 9 33·0	37·43	14	20 4 36·86	19 46 23·4	94·13
15	18 17 4·66	25 5 48·4	38·85	15	20 6 46·28	19 36 58·6	95·03
16	18 19 28·77	25 1 55·3	40·27	16	20 8 55·37	19 27 28·4	95·91
17	18 21 52·64	24 57 53·7	41·68	17	20 11 4·13	19 17 52·9	96·78
18	18 24 16·25	24 53 43·6	43·08	18	20 13 12·55	19 8 12·2	97·65
19	18 26 39·60	24 49 25·1	44·47	19	20 15 20·63	18 58 26·4	98·50
20	18 29 2·70	24 44 58·3	45·85	20	20 17 28·38	18 48 35·4	99·33
21	18 31 25·53	24 40 23·2	47·23	21	20 19 35·80	18 38 39·4	100·15
22	18 33 48·09	24 35 39·8	48·59	22	20 21 42·89	18 28 38·5	100·97
23	18 36 10·37	S. 24 30 48·2	49·94	23	20 23 49·65	S. 18 18 32·7	101·77
	WEDNESDAY 6.				*FRIDAY 8.*		
0	18 38 32·38	S. 24 25 48·6	51·28	0	20 25 56·08	S. 18 8 22·0	102·56
1	18 40 54·11	24 20 40·9	52·62	1	20 28 2·18	17 58 6·6	103·34
2	18 43 15·55	24 15 25·2	53·94	2	20 30 7·96	17 47 46·5	104·11
3	18 45 36·70	24 10 1·6	55·25	3	20 32 13·42	17 37 21·9	104·86
4	18 47 57·56	24 4 30·0	56·55	4	20 34 18·55	17 26 52·7	105·61
5	18 50 18·13	23 58 50·7	57·85	5	20 36 23·36	17 16 19·0	106·34
6	18 52 38·40	23 53 3·6	59·13	6	20 38 27·85	17 5 41·0	107·05
7	18 54 58·37	23 47 8·8	60·40	7	20 40 32·02	16 54 58·7	107·76
8	18 57 18·03	23 41 6·4	61·66	8	20 42 35·87	16 44 12·1	108·46
9	18 59 37·39	23 34 56·5	62·91	9	20 44 39·42	16 33 21·3	109·14
10	19 1 56·44	23 28 39·0	64·15	10	20 46 42·65	16 22 26·5	109·81
11	19 4 15·17	23 22 14·1	65·38	11	20 48 45·57	16 11 27·7	110·47
12	19 6 33·59	23 15 41·9	66·60	12	20 50 48·18	16 0 24·9	111·12
13	19 8 51·69	23 9 2·3	67·80	13	20 52 50·49	15 49 18·2	111·76
14	19 11 9·48	23 2 15·5	69·00	14	20 54 52·50	15 38 7·6	112·38
15	19 13 26·94	22 55 21·5	70·18	15	20 56 54·20	15 26 53·3	113·00
16	19 15 44·08	22 48 20·4	71·35	16	20 58 55·61	15 15 35·4	113·60
17	19 18 0·89	22 41 12·3	72·51	17	21 0 56·72	15 4 13·8	114·19
18	19 20 17·38	22 33 57·3	73·66	18	21 2 57·54	14 52 48·6	114·77
19	19 22 33·54	22 26 35·3	74·79	19	21 4 58·07	14 41 20·0	115·34
20	19 24 49·37	22 19 6·5	75·92	20	21 6 58·31	14 29 47·9	115·90
21	19 27 4·87	22 11 31·0	77·03	21	21 8 58·26	14 18 12·5	116·45
22	19 29 20·03	22 3 48·8	78·13	22	21 10 57·93	14 6 33·8	116·98
23	19 31 34·86	21 56 0·0	79·22	23	21 12 57·31	13 54 51·9	117·51
24	19 33 49·36	S. 21 48 4·7		24	21 14 56·42	S. 13 43 6·9	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 9.				*MONDAY* 11.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	21 14 56·42	S. 13 43 6·9	118·03	0	22 45 47·89	S. 3 37 11·7	131·10
1	21 16 55·26	13 31 18·7	118·53	1	22 47 37·31	3 24 5·1	131·16
2	21 18 53·82	13 19 27·6	119·02	2	22 49 26·62	3 10 58·1	131·20
3	21 20 52·11	13 7 33·4	119·50	3	22 51 15·83	2 57 50·9	131·24
4	21 22 50·14	12 55 36·4	119·98	4	22 53 4·93	2 44 43·4	131·27
5	21 24 47·90	12 43 36·6	120·44	5	22 54 53·93	2 31 35·8	131·29
6	21 26 45·40	12 31 33·9	120·89	6	22 56 42·83	2 18 28·0	131·31
7	21 28 42·65	12 19 28·6	121·33	7	22 58 31·65	2 5 20·2	131·31
8	21 30 39·64	12 7 20·6	121·76	8	23 0 20·38	1 52 12·3	131·31
9	21 32 36·37	11 55 10·0	122·18	9	23 2 9·02	1 39 4·4	131·30
10	21 34 32·86	11 42 57·0	122·59	10	23 3 57·58	1 25 56·6	131·28
11	21 36 29·10	11 30 41·4	122·99	11	23 5 46·07	1 12 48·9	131·26
12	21 38 25·10	11 18 23·5	123·38	12	23 7 34·48	0 59 41·3	131·23
13	21 40 20·86	11 6 3·2	123·76	13	23 9 22·82	0 46 33·9	131·19
14	21 42 16·38	10 53 40·7	124·12	14	23 11 11·10	0 33 26·8	131·14
15	21 44 11·68	10 41 15·9	124·48	15	23 12 59·31	0 20 19·9	131·09
16	21 46 6·74	10 28 49·0	124·83	16	23 14 47·47	S. 0 7 13·4	131·02
17	21 48 1·58	10 16 20·0	125·17	17	23 16 35·57	N. 0 5 52·8	130·95
18	21 49 56·19	10 3 49·0	125·50	18	23 18 23·62	0 18 58·5	130·88
19	21 51 50·58	9 51 16·0	125·82	19	23 20 11·62	0 32 3·8	130·79
20	21 53 44·76	9 38 41·1	126·13	20	23 21 59·58	0 45 8·5	130·70
21	21 55 38·72	9 26 4·3	126·43	21	23 23 47·50	0 58 12·7	130·60
22	21 57 32·47	9 13 25·7	126·72	22	23 25 35·38	1 11 16·3	130·49
23	21 59 26·02	S. 9 0 45·4	127·00	23	23 27 23·23	N. 1 24 19·3	130·38
	SUNDAY 10.				*TUESDAY* 12.		
0	22 1 19·36	S. 8 48 3·4	127·27	0	23 29 11·05	N. 1 37 21·6	130·26
1	22 3 12·51	8 35 19·8	127·54	1	23 30 58·85	1 50 23·2	130·13
2	22 5 5·46	8 22 34·6	127·79	2	23 32 46·62	2 3 24·0	130·00
3	22 6 58·21	8 9 47·8	128·03	3	23 34 34·38	2 16 23·9	129·86
4	22 8 50·78	7 56 59·6	128·26	4	23 36 22·12	2 29 23·1	129·71
5	22 10 43·16	7 44 10·0	128·49	5	23 38 9·85	2 42 21·3	129·55
6	22 12 35·36	7 31 19·1	128·71	6	23 39 57·58	2 55 18·6	129·39
7	22 14 27·39	7 18 26·9	128·92	7	23 41 45·30	3 8 14·9	129·22
8	22 16 19·23	7 5 33·4	129·11	8	23 43 33·02	3 21 10·2	129·04
9	22 18 10·90	6 52 38·7	129·30	9	23 45 20·74	3 34 4·5	128·85
10	22 20 2·41	6 39 42·9	129·48	10	23 47 8·47	3 46 57·6	128·66
11	22 21 53·75	6 26 46·0	129·65	11	23 48 56·21	3 59 49·6	128·47
12	22 23 44·93	6 13 48·1	129·81	12	23 50 43·97	4 12 40·4	128·26
13	22 25 35·96	6 0 49·2	129·97	13	23 52 31·75	4 25 30·0	128·05
14	22 27 26·83	5 47 49·4	130·11	14	23 54 19·55	4 38 18·3	127·83
15	22 29 17·55	5 34 48·7	130·25	15	23 56 7·37	4 51 5·2	127·60
16	22 31 8·13	5 21 47·2	130·38	16	23 57 55·23	5 3 50·8	127·37
17	22 32 58·56	5 8 44·9	130·50	17	23 59 43·12	5 16 35·0	127·13
18	22 34 48·85	4 55 41·9	130·61	18	0 1 31·04	5 29 17·8	126·88
19	22 36 39·01	4 42 38·3	130·71	19	0 3 19·00	5 41 59·1	126·63
20	22 38 29·04	4 29 34·0	130·81	20	0 5 7·01	5 54 38·9	126·37
21	22 40 18·94	4 16 29·1	130·89	21	0 6 55·07	6 7 17·1	126·10
22	22 42 8·71	4 3 23·7	130·97	22	0 8 43·18	6 19 53·7	125·83
23	22 43 58·36	3 50 17·9	131·04	23	0 10 31·34	6 32 28·7	125·55
24	22 45 47·89	S. 3 37 11·7		24	0 12 19·56	N. 6 45 1·9	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 13.				*FRIDAY* 15.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	0 12 19·56	N. 6 45 1·9	125·26	0	1 41 10·30	N.16 1 16·3	103·37
1	0 14 7·84	6 57 33·5	124·97	1	1 43 5·53	16 11 36·5	102·74
2	0 15 56·19	7 10 3·3	124·67	2	1 45 0·98	16 21 53·0	102·10
3	0 17 44·61	7 22 31·3	124·36	3	1 46 56·66	16 32 5·6	101·46
4	0 19 33·10	7 34 57·4	124·04	4	1 48 52·56	16 42 14·3	100·80
5	0 21 21·66	7 47 21·7	123·72	5	1 50 48·69	16 52 19·1	100·14
6	0 23 10·31	7 59 44·1	123·39	6	1 52 45·05	17 2 20·0	99·47
7	0 24 59·04	8 12 4·4	123·06	7	1 54 41·64	17 12 16·8	98·80
8	0 26 47·85	8 24 22·8	122·72	8	1 56 38·48	17 22 9·6	98·11
9	0 28 36·75	8 36 39·1	122·37	9	1 58 35·55	17 31 58·3	97·42
10	0 30 25·75	8 48 53·3	122·01	10	2 0 32·86	17 41 42·8	96·72
11	0 32 14·85	9 1 5·4	121·65	11	2 2 30·41	17 51 23·1	96·01
12	0 34 4·04	9 13 15·3	121·28	12	2 4 28·21	18 0 59·1	95·29
13	0 35 53·34	9 25 23·0	120·91	13	2 6 26·26	18 10 30·8	94·57
14	0 37 42·75	9 37 28·4	120·52	14	2 8 24·56	18 19 58·3	93·83
15	0 39 32·26	9 49 31·6	120·13	15	2 10 23·12	18 29 21·3	93·09
16	0 41 21·89	10 1 32·4	119·74	16	2 12 21·93	18 38 39·8	92·34
17	0 43 11·64	10 13 30·8	119·34	17	2 14 21·00	18 47 53·9	91·59
18	0 45 1·51	10 25 26·9	118·93	18	2 16 20·33	18 57 3·4	90·82
19	0 46 51·51	10 37 20·4	118·51	19	2 18 19·92	19 6 8·4	90·05
20	0 48 41·63	10 49 11·5	118 08	20	2 20 19·77	19 15 8·7	89·27
21	0 50 31·89	11 1 0·0	117·65	21	2 22 19·89	19 24 4·3	88·48
22	0 52 22·28	11 12 45·9	117·22	22	2 24 20·28	19 32 55·2	87·69
23	0 54 12·81	N.11 24 29·2	116·77	23	2 26 20·94	N.19 41 41·4	86·88
	THURSDAY 14.				*SATURDAY* 16.		
0	0 56 3·47	N.11 36 9·8	116·32	0	2 28 21·87	N.19 50 22·6	86·07
1	0 57 54·28	11 47 47·7	115·86	1	2 30 23·07	19 58 59·0	85·25
2	0 59 45·25	11 59 22·9	115·40	2	2 32 24·55	20 7 30·5	84·42
3	1 1 36·36	12 10 55·3	114·93	3	2 34 26·30	20 15 57·0	83·58
4	1 3 27·63	12 22 24·9	114·45	4	2 36 28·33	20 24 18·5	82·73
5	1 5 19·05	12 33 51·6	113·96	5	2 38 30·64	20 32 34·8	81·87
6	1 7 10·64	12 45 15·4	113·47	6	2 40 33·24	20 40 46·1	81·01
7	1 9 2·39	12 56 36·2	112·97	7	2 42 36·11	20 48 52·1	80·14
8	1 10 54·31	13 7 54·0	112·47	8	2 44 39·27	20 56 53·0	79·26
9	1 12 46·40	13 19 8·8	111·95	9	2 46 42·71	21 4 48·5	78·37
10	1 14 38·66	13 30 20·6	111·43	10	2 48 46·44	21 12 38·7	77·47
11	1 16 31·10	13 41 29·2	110·90	11	2 50 50·46	21 20 23·6	76·56
12	1 18 23·72	13 52 34·6	110·36	12	2 52 54·76	21 28 2·9	75·65
13	1 20 16·52	14 3 36·8	109·82	13	2 54 59·35	21 35 36·8	74·73
14	1 22 9·51	14 14 35·7	109·27	14	2 57 4·23	21 43 5·2	73·79
15	1 24 2·69	14 25 31·3	108·72	15	2 59 9·41	21 50 27·9	72·85
16	1 25 56·06	14 36 23·6	108·15	16	3 1 14·87	21 57 45·1	71·90
17	1 27 49·63	14 47 12·5	107·58	17	3 3 20·63	22 4 56·5	70·95
18	1 29 43·40	14 57 58·0	107·00	18	3 5 26·68	22 12 2·2	69·98
19	1 31 37·36	15 8 40·0	106·41	19	3 7 33·03	22 19 2·0	69·00
20	1 33 31·53	15 19 18·5	105·82	20	3 9 39·67	22 25 56·0	68·01
21	1 35 25·91	15 29 53·4	105·22	21	3 11 46·60	22 32 44·1	67·02
22	1 37 20·49	15 40 24·7	104·61	22	3 13 53·83	22 39 26·3	66·02
23	1 39 15·29	15 50 52·4	103·99	23	3 16 1·35	22 46 2·4	65·01
24	1 41 10·30	N.16 1 16·3		24	3 18 9·17	N.22 52 32·4	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SUNDAY 17.		
	h m s	° ′ ″	″
0	3 18 9·17	N.22 52 32·4	63·99
1	3 20 17·29	22 58 56·3	62·96
2	3 22 25·69	23 5 14·1	61·92
3	3 24 34·40	23 11 25·6	60·88
4	3 26 43·40	23 17 30·9	59·82
5	3 28 52·70	23 23 29·8	58·76
6	3 31 2·29	23 29 22·3	57·69
7	3 33 12·17	23 35 8·4	56·60
8	3 35 22·35	23 40 48·1	55·51
9	3 37 32·82	23 46 21·2	54·41
10	3 39 43·59	23 51 47·7	53·30
11	3 41 54·65	23 57 7·5	52·19
12	3 44 5·99	24 2 20·6	51·07
13	3 46 17·63	24 7 27·0	49·94
14	3 48 29·55	24 12 26·6	48·79
15	3 50 41·76	24 17 19·4	47·64
16	3 52 54·26	24 22 5·3	46·48
17	3 55 7·05	24 26 44·2	45·31
18	3 57 20·12	24 31 16·0	44·14
19	3 59 33·47	24 35 40·9	42·95
20	4 1 47·10	24 39 58·6	41·76
21	4 4 1·00	24 44 9·2	40·56
22	4 6 15·19	24 48 12·6	39·35
23	4 8 29·65	N.24 52 8·7	38·13
	MONDAY 18.		
0	4 10 44·39	N.24 55 57·4	36·91
1	4 12 59·40	24 59 38·8	35·67
2	4 15 14·67	25 3 12·9	34·43
3	4 17 30·22	25 6 39·4	33·18
4	4 19 46·02	25 9 58·5	31·92
5	4 22 2·09	25 13 10·0	30·65
6	4 24 18·42	25 16 14·0	29·38
7	4 26 35·01	25 19 10·2	28·10
8	4 28 51·85	25 21 58·8	26·81
9	4 31 8·94	25 24 39·6	25·51
10	4 33 26·28	25 27 12·7	24·20
11	4 35 43·86	25 29 37·9	22·89
12	4 38 1·69	25 31 55·2	21·57
13	4 40 19·76	25 34 4·6	20·24
14	4 42 38·06	25 36 6·1	18·91
15	4 44 56·60	25 37 59·5	17·56
16	4 47 15·37	25 39 44·9	16·21
17	4 49 34·36	25 41 22·2	14·86
18	4 51 53·58	25 42 51·4	13·50
19	4 54 13·01	25 44 12·4	12·13
20	4 56 32·66	25 45 25·2	10·75
21	4 58 52·52	25 46 29·7	9·37
22	5 1 12·59	25 47 25·9	7·98
23	5 3 32·86	25 48 13·8	6·59
24	5 5 53·33	N.25 48 53·3	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 19.		
	h m s	° ′ ″	″
0	5 5 53·33	N.25 48 53·3	5·18
1	5 8 14·00	25 49 24·4	3·78
2	5 10 34·86	25 49 47·1	2·37
3	5 12 55·91	25 50 1·3	0·95
4	5 15 17·13	25 50 6·9	0·47
5	5 17 38·54	25 50 4·1	1·90
6	5 20 0·12	25 49 52·7	3·34
7	5 22 21·87	25 49 32·6	4·78
8	5 24 43·79	25 49 4·0	6·22
9	5 27 5·86	25 48 26·7	7·66
10	5 29 28·09	25 47 40·7	9·11
11	5 31 50·48	25 46 46·0	10·57
12	5 34 13·01	25 45 42·6	12·03
13	5 36 35·68	25 44 30·4	13·50
14	5 38 58·49	25 43 9·4	14·97
15	5 41 21·44	25 41 39·6	16·44
16	5 43 44·51	25 40 1·0	17·91
17	5 46 7·70	25 38 13·5	19·39
18	5 48 31·01	25 36 17·2	20·87
19	5 50 54·43	25 34 12·0	22·36
20	5 53 17·96	25 31 57·8	23·85
21	5 55 41·60	25 29 34·7	25·34
22	5 58 5·33	25 27 2·7	26·83
23	6 0 29·16	N.25 24 21·8	28·32
	WEDNESDAY 20.		
0	6 2 53·07	N.25 21 31·8	29·82
1	6 5 17·07	25 18 32·9	31·32
2	6 7 41·15	25 15 25·0	32·82
3	6 10 5·29	25 12 8·0	34·32
4	6 12 29·51	25 8 42·1	35·82
5	6 14 53·79	25 5 7·1	37·33
6	6 17 18·14	25 1 23·2	38·83
7	6 19 42·53	24 57 30·2	40·33
8	6 22 6·97	24 53 28·2	41·83
9	6 24 31·46	24 49 17·1	43·34
10	6 26 55·98	24 44 57·0	44·85
11	6 29 20·54	24 40 27·9	46·36
12	6 31 45·13	24 35 49·8	47·86
13	6 34 9·74	24 31 2·7	49·36
14	6 36 34·37	24 26 6·5	50·86
15	6 38 59·02	24 21 1·3	52·36
16	6 41 23·67	24 15 47·1	53·86
17	6 43 48·33	24 10 24·0	55·36
18	6 46 12·99	24 4 51·8	56·86
19	6 48 37·65	23 59 10·7	58·35
20	6 51 2·30	23 53 20·6	59·84
21	6 53 26·93	23 47 21·5	61·33
22	6 55 51·54	23 41 13·6	62·81
23	6 58 16·14	23 34 56·7	64·30
24	7 0 40·71	N.23 28 30·9	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 21.				*SATURDAY 23.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	7 0 40·71	N.23 28 30·9	65·78	0	8 54 45·19	N.15 37 9·3	128·57
1	7 3 5·25	23 21 56·2	67·26	1	8 57 4·96	15 24 17·9	129·63
2	7 5 29·75	23 15 12·7	68·73	2	8 59 24·59	15 11 20·1	130·67
3	7 7 54·21	23 8 20·3	70·20	3	9 1 44·10	14 58 16·1	131·70
4	7 10 18·63	23 1 19·1	71·66	4	9 4 3·48	14 45 5·9	132·71
5	7 12 43·01	22 54 9·2	73·12	5	9 6 22·74	14 31 49·7	133·71
6	7 15 7·33	22 46 50·4	74·57	6	9 8 41·86	14 18 27·4	134·69
7	7 17 31·60	22 39 23·0	76·02	7	9 11 0·86	14 4 59·3	135·66
8	7 19 55·82	22 31 46·9	77·47	8	9 13 19·74	13 51 25·3	136·61
9	7 22 19·97	22 24 2·0	78·91	9	9 15 38·50	13 37 45·6	137·55
10	7 24 44·06	22 16 8·6	80·34	10	9 17 57·13	13 24 0·3	138·48
11	7 27 8·07	22 8 6·6	81·77	11	9 20 15·64	13 10 9·4	139·39
12	7 29 32·02	21 59 56·0	83·19	12	9 22 34·03	12 56 13·1	140·29
13	7 31 55·89	21 51 36·9	84·60	13	9 24 52·30	12 42 11·4	141·17
14	7 34 19·68	21 43 9·3	86·01	14	9 27 10·45	12 28 4·3	142·04
15	7 36 43·39	21 34 33·3	87·41	15	9 29 28·49	12 13 52·1	142·89
16	7 39 7·02	21 25 48·8	88·80	16	9 31 46·42	11 59 34·8	143·72
17	7 41 30·56	21 16 55·9	90·19	17	9 34 4·23	11 45 12·4	144·54
18	7 43 54·00	21 7 54·8	91·58	18	9 36 21·93	11 30 45·1	145·35
19	7 46 17·36	20 58 45·3	92·95	19	9 38 39·52	11 16 13·1	146·13
20	7 48 40·62	20 49 27·6	94·31	20	9 40 57·00	11 1 36·3	146·90
21	7 51 3·78	20 40 1·7	95·67	21	9 43 14·38	10 46 54·8	147·66
22	7 53 26·84	20 30 27·7	97·02	22	9 45 31·65	10 32 8·9	148·40
23	7 55 49·79	N.20 20 45·6	98·36	23	9 47 48·82	N.10 17 18·5	149·12
	FRIDAY 22.				*SUNDAY 24.*		
0	7 58 12·64	N.20 10 55·4	99·70	0	9 50 5·89	N.10 2 23·7	149·83
1	8 0 35·38	20 0 57·2	101·02	1	9 52 22·86	9 47 24·7	150·52
2	8 2 58·01	19 50 51·1	102·34	2	9 54 39·74	9 32 21·6	151·20
3	8 5 20·53	19 40 37·1	103·64	3	9 56 56·53	9 17 14·4	151·86
4	8 7 42·93	19 30 15·2	104·94	4	9 59 13·23	9 2 3·2	152·50
5	8 10 5·22	19 19 45·6	106·23	5	10 1 29·84	8 46 48·2	153·12
6	8 12 27·39	19 9 8·2	107·50	6	10 3 46·37	8 31 29·5	153·72
7	8 14 49·45	18 58 23·2	108·77	7	10 6 2·81	8 16 7·2	154·31
8	8 17 11·38	18 47 30·6	110·02	8	10 8 19·18	8 0 41·3	154·88
9	8 19 33·19	18 36 30·4	111·27	9	10 10 35·47	7 45 12·0	155·44
10	8 21 54·88	18 25 22·8	112·50	10	10 12 51·68	7 29 39·4	155·97
11	8 24 16·45	18 14 7·8	113·73	11	10 15 7·82	7 14 3·6	156·49
12	8 26 37·89	18 2 45·4	114·94	12	10 17 23·90	6 58 24·7	156·99
13	8 28 59·20	17 51 15·8	116·14	13	10 19 39·91	6 42 42·8	157·48
14	8 31 20·39	17 39 38·9	117·33	14	10 21 55·86	6 26 57·9	157·94
15	8 33 41·45	17 27 54·9	118·51	15	10 24 11·75	6 11 10·2	158·39
16	8 36 2·38	17 16 3·8	119·68	16	10 26 27·58	5 55 19·9	158·82
17	8 38 23·18	17 4 5·7	120·83	17	10 28 43·36	5 39 27·0	159·23
18	8 40 43·86	16 52 0·7	121·98	18	10 30 59·09	5 23 31·6	159·63
19	8 43 4·41	16 39 48·9	123·11	19	10 33 14·78	5 7 33·8	160·00
20	8 45 24·82	16 27 30·2	124·22	20	10 35 30·42	4 51 33·8	160·36
21	8 47 45·11	16 15 4·9	125·33	21	10 37 46·02	4 35 31·6	160·70
22	8 50 5·26	16 2 32·9	126·42	22	10 40 1·58	4 19 27·4	161·02
23	8 52 25·29	15 49 54·4	127·50	23	10 42 17·11	4 3 21·3	161·32
24	8 54 45·19	N.15 37 9·3		24	10 44 32·61	N. 3 47 13·4	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 25.				*WEDNESDAY* 27.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	10 44 32·61	N. 3 47 13·4	161·61	0	12 33 30·37	S. 9 6 3·3	153·21
1	10 46 48·08	3 31 3·8	161·87	1	12 35 48·72	9 21 22·6	152·58
2	10 49 3·53	3 14 52·5	162·12	2	12 38 7·20	9 36 38·1	151·93
3	10 51 18·96	2 58 39·8	162·35	3	12 40 25·84	9 51 49·7	151·27
4	10 53 34·37	2 42 25·7	162·56	4	12 42 44·62	10 6 57·3	150·59
5	10 55 49·76	2 26 10·4	162·75	5	12 45 3·54	10 22 0·8	149·89
6	10 58 5·15	2 9 53·9	162·92	6	12 47 22·62	10 37 0·2	149·17
7	11 0 20·53	1 53 36·3	163·08	7	12 49 41·86	10 51 55·2	148·43
8	11 2 35·91	1 37 17·8	163·21	8	12 52 1·26	11 6 45·8	147·68
9	11 4 51·29	1 20 58·6	163·33	9	12 54 20·81	11 21 31·9	146·91
10	11 7 6·68	1 4 38·6	163·43	10	12 56 40·52	11 36 13·3	146·12
11	11 9 22·07	0 48 18·0	163·51	11	12 59 0·40	11 50 50·1	145·32
12	11 11 37·47	0 31 56·9	163·57	12	13 1 20·44	12 5 22·0	144·50
13	11 13 52·89	N. 0 15 35·5	163·61	13	13 3 40·65	12 19 49·0	143·67
14	11 16 8·33	S. 0 0 46·2	163·63	14	13 6 1·03	12 34 11·0	142·81
15	11 18 23·80	0 17 8·0	163·64	15	13 8 21·59	12 48 27·9	141·94
16	11 20 39·29	0 33 29·8	163·62	16	13 10 42·32	13 2 39·6	141·05
17	11 22 54·81	0 49 51·6	163·59	17	13 13 3·22	13 16 45·9	140·15
18	11 25 10·36	1 6 13·1	163·54	18	13 15 24·31	13 30 46·8	139·22
19	11 27 25·95	1 22 34·3	163·46	19	13 17 45·57	13 44 42·1	138·28
20	11 29 41·59	1 38 55·1	163·37	20	13 20 7·01	13 58 31·8	137·33
21	11 31 57·26	1 55 15·4	163·26	21	13 22 28·64	14 12 15·8	136·36
22	11 34 12·98	2 11 34·9	163·13	22	13 24 50·45	14 25 54·0	135·37
23	11 36 28·76	S. 2 27 53·7	162·99	23	13 27 12·45	S. 14 39 26·2	134·37
	TUESDAY 26.				*THURSDAY* 28.		
0	11 38 44·59	S. 2 44 11·6	162·82	0	13 29 34·63	S. 14 52 52·4	133·35
1	11 41 0·48	3 0 28·5	162·64	1	13 31 57·00	15 6 12·5	132·32
2	11 43 16·43	3 16 44·4	162·43	2	13 34 19·56	15 19 26·5	131·27
3	11 45 32·45	3 32 59·0	162·21	3	13 36 42·31	15 32 34·1	130·21
4	11 47 48·54	3 49 12·2	161·97	4	13 39 5·25	15 45 35·3	129·13
5	11 50 4·70	4 5 24·0	161·71	5	13 41 28·37	15 58 30·1	128·04
6	11 52 20·94	4 21 34·3	161·43	6	13 43 51·69	16 11 18·3	126·93
7	11 54 37·26	4 37 42·9	161·13	7	13 46 15·20	16 23 59·9	125·80
8	11 56 53·66	4 53 49·7	160·81	8	13 48 38·89	16 36 34·7	124·66
9	11 59 10·15	5 9 54·5	160·48	9	13 51 2·78	16 49 2·7	123·51
10	12 1 26·73	5 25 57·4	160·12	10	13 53 26·87	17 1 23·8	122·35
11	12 3 43·41	5 41 58·1	159·75	11	13 55 51·14	17 13 37·9	121·17
12	12 6 0·19	5 57 56·6	159·36	12	13 58 15·60	17 25 44·9	119·97
13	12 8 17·07	6 13 52·8	158·95	13	14 0 40·26	17 37 44·7	118·77
14	12 10 34·05	6 29 46·4	158·52	14	14 3 5·10	17 49 37·3	117·55
15	12 12 51·15	6 45 37·5	158·07	15	14 5 30·14	18 1 22·6	116·31
16	12 15 8·35	7 1 25·9	157·60	16	14 7 55·37	18 13 0·5	115·06
17	12 17 25·67	7 17 11·6	157·12	17	14 10 20·78	18 24 30·9	113·80
18	12 19 43·10	7 32 54·3	156·61	18	14 12 46·39	18 35 53·7	112·53
19	12 22 0·66	7 48 34·0	156·09	19	14 15 12·18	18 47 8·9	111·24
20	12 24 18·34	8 4 10·5	155·55	20	14 17 38·15	18 58 16·3	109·94
21	12 26 36·15	8 19 43·8	155·00	21	14 20 4·31	19 9 15·9	108·63
22	12 28 54·09	8 35 13·8	154·42	22	14 22 30·66	19 20 7·7	107·30
23	12 31 12·16	8 50 40·3	153·82	23	14 24 57·18	19 30 51·6	105·97
24	12 33 30·37	S. 9 6 3·3		24	14 27 23·89	S. 19 41 27·3	

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MEAN TIME.

PHASES OF THE MOON.

		d	h	m
☾	*Last Quarter*	1	21	59·0
●	New Moon	9	8	4·8
☽	*First Quarter*	17	12	19·4
○	Full Moon	24	16	42·8

		d	h
☾	Apogee	13	23
☾	Perigee	26	1

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		Noon.	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Pollux	W.	99 52 31	2320	101 38 1	2328	103 23 19	2338	105 8 23	2347
	Jupiter	W.	67 37 23	2262	69 24 18	2270	71 11 1	2278	72 57 32	2287
	Regulus	W.	62 56 6	2301	64 42 4	2309	66 27 51	2317	68 13 25	2326
	Saturn	W.	53 10 37	2301	54 56 35	2309	56 42 22	2316	58 27 58	2323
	Antares	E.	37 1 2	2292	35 14 51	2300	33 28 52	2309	31 43 6	2318
	Venus	E.	77 21 16	2687	75 44 18	2696	74 7 33	2705	72 31 0	2715
	Sun	E.	101 57 34	2614	100 18 58	2623	98 40 35	2632	97 2 24	2643
2	Jupiter	W.	81 47 0	2330	83 32 15	2339	85 17 18	2348	87 2 8	2357
	Regulus	W.	76 58 10	2369	78 42 29	2378	80 26 35	2387	82 10 28	2396
	Saturn	W.	67 13 12	2364	68 57 39	2371	70 41 55	2380	72 25 58	2389
	Spica	W.	23 0 32	2403	24 44 3	2407	26 27 28	2412	28 10 46	2417
	Venus	E.	64 31 28	2763	62 56 12	2774	61 21 10	2783	59 46 20	2793
	α Aquilæ	E.	79 27 21	2948	77 56 3	2965	76 25 7	2983	74 54 33	3002
	Sun	E.	88 54 44	2690	87 17 51	2700	85 41 11	2710	84 4 44	2719
3	Jupiter	W.	95 43 4	2401	97 26 37	2410	99 9 57	2419	100 53 4	2429
	Regulus	W.	90 46 42	2441	92 29 18	2450	94 11 41	2460	95 53 51	2468
	Saturn	W.	81 3 10	2432	82 45 59	2441	84 28 36	2450	86 11 0	2458
	Spica	W.	36 45 5	2451	38 27 27	2460	40 9 37	2467	41 51 37	2475
	Venus	E.	51 55 25	2843	50 21 53	2853	48 48 34	2863	47 15 28	2873
	α Aquilæ	E.	67 28 7	3117	66 0 18	3145	64 33 3	3174	63 6 22	3205
	Sun	E.	76 5 45	2769	74 30 36	2779	72 55 41	2789	71 20 58	2798
4	Jupiter	W.	109 25 28	2473	111 7 19	2482	112 48 57	2491	114 30 23	2500
	Regulus	W.	104 21 33	2513	106 2 28	2522	107 43 10	2532	109 23 39	2540
	Saturn	W.	94 39 54	2502	96 21 4	2512	98 2 1	2520	99 42 46	2530
	Spica	W.	50 18 44	2516	51 59 35	2525	53 40 14	2533	55 20 42	2541
	Venus	E.	39 33 5	2922	38 1 14	2931	36 29 35	2942	34 58 9	2951
	α Aquilæ	E.	56 3 5	3397	54 40 45	3444	53 19 18	3494	51 58 47	3549
	Sun	E.	63 30 35	2847	61 57 8	2857	60 23 54	2866	58 50 52	2876
5	Saturn	W.	108 3 26	2574	109 42 57	2583	111 22 15	2591	113 1 22	2601
	Spica	W.	63 40 8	2582	65 19 27	2591	66 58 34	2599	68 37 30	2607
	Antares	W.	17 54 10	2579	19 33 34	2587	21 12 47	2594	22 51 50	2603
	Venus	E.	27 23 59	2999	25 53 45	3008	24 23 42	3018	22 53 52	3027
	Sun	E.	51 8 49	2924	49 37 1	2934	48 5 26	2943	46 34 2	2953
6	Spica	W.	76 49 20	2649	78 27 8	2657	80 4 45	2666	81 42 10	2674
	Antares	W.	31 4 14	2644	32 42 9	2652	34 19 53	2660	35 57 27	2669
	Sun	E.	39 0 6	3002	37 29 55	3012	35 59 57	3022	34 30 11	3031
11	Sun	W.	19 5 29	3385	20 28 3	3389	21 50 32	3393	23 12 57	3397
	Mars	E.	44 22 50	3256	42 57 47	3265	41 32 54	3274	40 8 12	3284
	α Arietis	E.	54 5 42	2996	52 35 24	3005	51 5 17	3012	49 35 19	3020
	Aldebaran	E.	86 44 42	3026	85 15 2	3034	83 45 31	3042	82 16 10	3048
12	Sun	W.	30 3 39	3422	31 25 30	3427	32 47 16	3432	34 8 56	3438
	Mars	E.	33 7 29	3332	31 43 55	3342	30 20 32	3353	28 57 21	3365
	α Arietis	E.	42 8 1	3060	40 39 2	3069	39 10 14	3077	37 41 36	3084
	Aldebaran	E.	74 51 34	3083	73 23 4	3090	71 54 42	3096	70 26 27	3103
	Pollux	E.	116 50 53	3059	115 21 53	3064	113 52 59	3069	112 24 11	3073
13	Sun	W.	40 55 58	3458	42 17 9	3462	43 38 16	3464	44 59 20	3468

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Pollux W.	106 53 14	2356	108 37 52	2366	110 22 16	2375	112 6 26	2385
	Jupiter W.	74 43 50	2295	76 29 57	2304	78 15 50	2313	80 1 31	2321
	Regulus W.	69 58 47	2334	71 43 57	2343	73 28 54	2352	75 13 38	2360
	Saturn W.	60 13 24	2331	61 58 38	2339	63 43 41	2347	65 28 32	2355
	Antares E.	29 57 33	2328	28 12 14	2336	26 27 7	2345	24 42 13	2355
	Venus E.	70 54 40	2725	69 18 33	2734	67 42 38	2744	66 6 57	2753
	Sun E.	95 24 27	2652	93 46 42	2661	92 9 10	2670	90 31 50	2680
2	Jupiter W.	88 46 45	2365	90 31 10	2375	92 15 21	2384	93 59 19	2393
	Regulus W.	83 54 9	2405	85 37 36	2414	87 20 51	2423	89 3 53	2432
	Saturn W.	74 9 49	2397	75 53 28	2406	77 36 54	2414	79 20 8	2423
	Spica W.	29 53 57	2424	31 36 58	2430	33 19 51	2437	35 2 33	2444
	Venus E.	58 11 43	2803	56 37 19	2813	55 3 8	2823	53 29 10	2833
	α Aquilæ E.	73 24 23	3022	71 54 37	3044	70 25 19	3066	68 56 28	3091
	Sun E.	82 28 30	2729	80 52 29	2740	79 16 42	2749	77 41 7	2759
3	Jupiter W.	102 35 58	2437	104 18 40	2447	106 1 8	2455	107 43 25	2465
	Regulus W.	97 35 49	2477	99 17 34	2487	100 59 6	2495	102 40 26	2504
	Saturn W.	87 53 12	2467	89 35 11	2476	91 16 58	2485	92 58 32	2494
	Spica W.	43 33 25	2483	45 15 2	2492	46 56 27	2500	48 37 41	2507
	Venus E.	45 42 34	2883	44 9 53	2893	42 37 25	2902	41 5 9	2912
	α Aquilæ E.	61 40 19	3238	60 14 55	3274	58 50 13	3312	57 26 16	3352
	Sun E.	69 46 28	2808	68 12 11	2818	66 38 6	2828	65 4 14	2838
4	Jupiter W.	116 11 36	2509	117 52 37	2518	119 33 25	2527	121 14 1	2535
	Regulus W.	111 3 57	2549	112 44 2	2558	114 23 54	2567	116 3 35	2576
	Saturn W.	101 23 18	2538	103 3 39	2547	104 43 47	2556	106 23 43	2565
	Spica W.	57 0 58	2549	58 41 3	2558	60 20 56	2566	62 0 38	2574
	Venus E.	33 26 55	2961	31 55 53	2970	30 25 3	2980	28 54 25	2989
	α Aquilæ E.	50 39 17	3608	49 20 51	3673	48 3 35	3742	46 47 32	3818
	Sun E.	57 18 3	2886	55 45 26	2896	54 13 2	2905	52 40 49	2915
5	Saturn W.	114 40 16	2610	116 18 58	2619	117 57 27	2628	119 35 44	2637
	Spica W.	70 16 15	2616	71 54 48	2624	73 33 10	2633	75 11 20	2641
	Antares W.	24 30 41	2611	26 9 21	2620	27 47 49	2627	29 26 7	2635
	Venus E.	21 24 13	3038	19 54 47	3047	18 25 32	3056	16 56 28	3066
	Sun E.	45 2 50	2963	43 31 51	2973	42 1 4	2982	40 30 29	2992
6	Spica W.	83 19 25	2683	84 56 28	2691	86 33 20	2699	88 10 1	2707
	Antares W.	37 34 48	2677	39 11 59	2685	40 48 59	2694	42 25 47	2702
	Sun E.	33 0 37	3042	31 31 16	3052	30 2 8	3063	28 33 13	3074
11	Sun W.	24 35 17	3402	25 57 31	3407	27 19 39	3412	28 41 42	3417
	Mars E.	38 43 42	3293	37 19 22	3302	35 55 13	3312	34 31 15	3322
	α Arietis E.	48 5 31	3029	46 35 54	3036	45 6 26	3044	43 37 8	3053
	Aldebaran E.	80 46 57	3056	79 17 53	3063	77 48 58	3070	76 20 12	3077
12	Sun W.	35 30 30	3442	36 51 59	3446	38 13 24	3451	39 34 43	3455
	Mars E.	27 34 24	3376	26 11 40	3388	24 49 10	3402	23 26 56	3417
	α Arietis E.	36 13 7	3093	34 44 49	3101	33 16 41	3110	31 48 43	3119
	Aldebaran E.	68 58 21	3109	67 30 23	3115	66 2 31	3121	64 34 47	3127
	Pollux E.	110 55 28	3078	109 26 51	3082	107 58 19	3085	106 29 51	3089
13	Sun W.	46 20 20	3470	47 41 18	3472	49 2 13	3474	50 23 6	3475

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
13	Aldebaran E.	63 7 10	3132	61 39 39	3138	60 12 16	3143	58 44 59	3148
	Pollux E.	105 1 28	3093	103 33 10	3096	102 4 55	3098	100 36 43	3101
14	Sun W.	51 43 58	3476	53 4 49	3478	54 25 38	3477	55 46 28	3477
	Aldebaran E.	51 30 6	3173	50 3 25	3178	48 36 49	3183	47 10 20	3188
	Pollux E.	93 16 27	3110	91 48 30	3110	90 20 33	3110	88 52 36	3111
15	Sun W.	62 30 49	3470	63 51 47	3466	65 12 49	3463	66 33 54	3460
	Aldebaran E.	39 59 24	3216	38 33 34	3222	37 7 51	3230	35 42 17	3238
	Pollux E.	81 32 45	3105	80 4 42	3104	78 36 37	3101	77 8 28	3097
	Jupiter E.	111 58 5	3038	110 28 40	3035	108 59 11	3033	107 29 39	3029
	Regulus E.	118 29 24	3086	117 0 57	3084	115 32 28	3080	114 3 54	3077
16	Sun W.	73 20 35	3433	74 42 14	3426	76 4 1	3419	77 25 56	3411
	Aldebaran E.	28 37 31	3305	27 13 25	3327	25 49 45	3353	24 26 35	3385
	Pollux E.	69 46 36	3076	68 17 57	3071	66 49 12	3065	65 20 19	3058
	Jupiter E.	100 0 39	3005	98 30 32	2998	97 0 17	2992	95 29 55	2985
	Regulus E.	106 39 48	3052	105 10 40	3045	103 41 23	3038	102 11 58	3032
	Saturn E.	115 21 31	3039	113 52 7	3032	112 22 34	3025	110 52 52	3018
17	Sun W.	84 17 55	3365	85 40 52	3354	87 4 1	3343	88 27 23	3331
	Mars W.	23 35 12	3322	24 58 58	3303	26 23 6	3283	27 47 37	3265
	α Arietis W.	18 8 26	3139	19 35 48	3107	21 3 49	3079	22 32 24	3054
	Pollux E.	57 53 49	3021	56 24 2	3013	54 54 6	3004	53 23 58	2995
	Jupiter E.	87 55 36	2942	86 24 11	2933	84 52 34	2923	83 20 44	2912
	Regulus E.	94 42 29	2989	93 12 2	2979	91 41 23	2968	90 10 30	2957
	Saturn E.	103 21 53	2974	101 51 7	2964	100 20 9	2953	98 48 57	2942
18	Sun W.	95 27 48	3265	96 52 41	3251	98 17 50	3236	99 43 17	3221
	Mars W.	34 55 20	3179	36 21 54	3162	37 48 49	3145	39 16 4	3128
	α Arietis W.	30 2 23	2950	31 33 38	2932	33 5 16	2914	34 37 17	2895
	Pollux E.	45 50 23	2946	44 19 2	2937	42 47 30	2926	41 15 44	2916
	Jupiter E.	75 38 0	2852	74 4 40	2840	72 31 4	2826	70 57 10	2812
	Regulus E.	82 32 32	2897	81 0 10	2884	79 27 30	2870	77 54 33	2856
	Saturn E.	91 9 19	2882	89 36 37	2868	88 3 37	2854	86 30 19	2840
19	Sun W.	106 55 12	3138	108 22 36	3121	109 50 20	3103	111 18 26	3085
	Mars W.	46 37 40	3038	48 7 5	3019	49 36 54	3001	51 7 6	2982
	α Arietis W.	42 23 12	2805	43 57 33	2787	45 32 18	2769	47 7 26	2750
	Pollux E.	33 33 49	2870	32 0 52	2863	30 27 46	2857	28 54 32	2854
	Jupiter E.	63 3 1	2738	61 27 11	2723	59 51 1	2707	58 14 30	2690
	Regulus E.	70 5 4	2780	68 30 10	2764	66 54 55	2747	65 19 18	2731
	Saturn E.	78 39 8	2765	77 3 54	2750	75 28 20	2733	73 52 23	2716
20	Sun W.	118 44 34	2991	120 14 58	2972	121 45 46	2953	123 16 58	2933
	Mars W.	58 44 4	2885	60 16 42	2865	61 49 46	2846	63 23 14	2825
	α Arietis W.	55 9 18	2657	56 46 56	2638	58 25 0	2619	60 3 29	2600
	Aldebaran W.	23 56 14	2969	25 27 6	2912	26 59 10	2862	28 32 18	2818
	Jupiter E.	50 6 19	2606	48 27 32	2589	46 48 22	2572	45 8 48	2554
	Regulus E.	57 15 39	2645	55 37 45	2628	53 59 28	2610	52 20 46	2592
	Saturn E.	65 47 9	2632	64 8 57	2614	62 30 21	2597	60 51 22	2579
	Spica E.	111 18 24	2641	109 40 25	2622	108 2 0	2604	106 23 11	2585
21	Mars W.	71 17 10	2725	72 53 16	2705	74 29 49	2686	76 6 48	2666

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
13	Aldebaran E.	57 17 48	3153	55 50 43	3159	54 23 45	3163	52 56 52	3169
	Pollux E.	99 8 35	3104	97 40 30	3105	96 12 27	3107	94 44 26	3109
14	Sun W.	57 7 18	3476	58 28 9	3476	59 49 0	3473	61 9 54	3472
	Aldebaran E.	45 43 56	3193	44 17 39	3198	42 51 27	3204	41 25 22	3209
	Pollux E.	87 24 40	3110	85 56 43	3110	84 28 45	3109	83 0 46	3107
15	Sun W.	67 55 3	3455	69 16 17	3450	70 37 37	3445	71 59 3	3439
	Aldebaran E.	34 16 53	3248	32 51 41	3259	31 26 42	3272	30 1 57	3287
	Pollux E.	75 40 15	3094	74 11 58	3090	72 43 36	3086	71 15 9	3081
	Jupiter E.	106 0 2	3025	104 30 20	3020	103 0 32	3016	101 30 39	3010
	Regulus E.	112 35 16	3073	111 6 33	3068	109 37 44	3064	108 8 50	3057
16	Sun W.	78 48 0	3403	80 10 13	3394	81 32 36	3385	82 55 10	3375
	Aldebaran E.	23 4 2	3425	21 42 14	3475	20 21 22	3538	19 1 40	3618
	Pollux E.	63 51 18	3052	62 22 9	3045	60 52 52	3037	59 23 25	3030
	Jupiter E.	93 59 23	2977	92 28 42	2969	90 57 50	2961	89 26 49	2952
	Regulus E.	100 42 25	3024	99 12 42	3015	97 42 48	3007	96 12 44	2998
	Saturn E.	109 23 2	3010	107 53 1	3001	106 22 49	2993	104 52 27	2983
17	Sun W.	89 50 59	3319	91 14 48	3306	92 38 53	3293	94 3 13	3280
	Mars W.	29 12 29	3248	30 37 41	3231	32 3 14	3214	33 29 7	3197
	α Arietis W.	24 1 30	3031	25 31 4	3009	27 1 5	2989	28 31 32	2969
	Pollux E.	51 53 39	2985	50 23 8	2976	48 52 25	2966	47 21 30	2957
	Jupiter E.	81 48 40	2901	80 16 23	2890	78 43 51	2877	77 11 3	2865
	Regulus E.	88 39 24	2946	87 8 4	2935	85 36 29	2923	84 4 39	2909
	Saturn E.	97 17 31	2931	95 45 51	2919	94 13 56	2907	92 41 46	2894
18	Sun W.	101 9 1	3204	102 35 5	3188	104 1 28	3172	105 28 10	3156
	Mars W.	40 43 40	3110	42 11 37	3092	43 39 56	3074	45 8 37	3056
	α Arietis W.	36 9 42	2877	37 42 30	2859	39 15 41	2841	40 49 15	2824
	Pollux E.	39 43 45	2906	38 11 34	2896	36 39 10	2887	35 6 35	2879
	Jupiter E.	69 22 58	2798	67 48 28	2783	66 13 38	2769	64 38 29	2754
	Regulus E.	76 21 17	2842	74 47 43	2827	73 13 50	2811	71 39 37	2796
	Saturn E.	84 56 43	2825	83 22 48	2811	81 48 35	2796	80 14 2	2780
19	Sun W.	112 46 54	3066	114 15 45	3048	115 44 58	3030	117 14 34	3010
	Mars W.	52 37 41	2963	54 8 40	2943	55 40 4	2924	57 11 52	2905
	α Arietis W.	48 42 59	2731	50 18 57	2713	51 55 19	2695	53 32 6	2676
	Pollux E.	27 21 14	2851	25 47 52	2852	24 14 32	2856	22 41 17	2865
	Jupiter E.	56 37 36	2674	55 0 21	2657	53 22 43	2640	51 44 43	2623
	Regulus E.	63 43 20	2714	62 6 59	2698	60 30 16	2680	58 53 9	2663
	Saturn E.	72 16 5	2700	70 39 25	2683	69 2 22	2666	67 24 57	2649
20	Sun W.	124 48 35	2913	126 20 37	2894	127 53 3	2874	129 25 55	2855
	Mars W.	64 57 9	2805	66 31 30	2785	68 6 17	2766	69 41 30	2745
	α Arietis W.	61 42 24	2580	63 21 46	2561	65 1 34	2543	66 41 48	2523
	Aldebaran W.	30 6 23	2776	31 41 23	2738	33 17 13	2702	34 53 50	2669
	Jupiter E.	43 28 50	2538	41 48 29	2520	40 7 44	2503	38 26 35	2487
	Regulus E.	50 41 40	2574	49 2 9	2556	47 22 13	2538	45 41 53	2520
	Saturn E.	59 11 58	2562	57 32 11	2545	55 52 0	2527	54 11 24	2510
	Spica E.	104 43 56	2567	103 4 16	2548	101 24 10	2530	99 43 38	2511
21	Mars W.	77 44 14	2646	79 22 6	2627	81 0 24	2607	82 39 9	2588

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
21	α Arietis W.	68 22 29	2504	70 3 37	2485	71 45 11	2466	73 27 12	2447
	Aldebaran W.	36 31 11	2638	38 9 15	2609	39 47 58	2580	41 27 21	2553
	Jupiter E.	36 45 3	2470	35 3 7	2453	33 20 48	2437	31 38 6	2422
	Regulus E.	44 1 8	2503	42 19 59	2485	40 38 25	2468	38 56 27	2451
	Saturn E.	52 30 25	2493	50 49 1	2477	49 7 15	2459	47 25 4	2443
	Spica E.	98 2 40	2492	96 21 16	2474	94 39 26	2455	92 57 9	2437
22	Mars W.	84 18 20	2570	85 57 56	2551	87 37 58	2533	89 18 26	2515
	α Arietis W.	82 3 53	2356	83 48 31	2338	85 33 35	2322	87 19 3	2304
	Aldebaran W.	49 53 11	2431	51 36 1	2410	53 19 22	2388	55 3 14	2368
	Regulus E.	30 20 46	2373	28 36 32	2359	26 51 58	2347	25 7 7	2336
	Saturn E.	38 48 34	2368	37 4 14	2355	35 19 35	2343	33 34 38	2333
	Spica E.	84 19 14	2346	82 34 22	2328	80 49 4	2312	79 3 22	2294
23	Mars W.	97 46 45	2432	99 29 34	2417	101 12 45	2403	102 56 16	2388
	α Arietis W.	96 12 30	2225	98 0 20	2211	99 48 31	2196	101 37 4	2183
	Aldebaran W.	63 49 35	2275	65 36 11	2259	67 23 11	2243	69 10 34	2228
	Pollux W.	22 2 36	2405	23 46 3	2365	25 30 29	2330	27 15 45	2298
	Spica E.	70 8 47	2216	68 20 43	2202	66 32 18	2188	64 43 32	2174
	Antares E.	115 51 4	2210	114 2 51	2194	112 14 15	2180	110 25 18	2167
24	Mars W.	111 38 43	2326	113 24 4	2316	115 9 40	2307	116 55 30	2298
	Aldebaran W.	78 12 48	2163	80 2 11	2152	81 51 51	2142	83 41 46	2133
	Pollux W.	36 12 0	2186	38 0 48	2170	39 50 1	2155	41 39 37	2141
	Spica E.	55 34 55	2116	53 44 20	2107	51 53 31	2098	50 2 28	2089
	Antares E.	101 15 42	2107	99 24 54	2097	97 33 50	2088	95 42 32	2079
25	Aldebaran W.	92 54 30	2098	94 45 32	2094	96 36 41	2090	98 27 55	2087
	Pollux W.	50 52 10	2090	52 43 24	2083	54 34 49	2078	56 26 22	2072
	Jupiter W.	21 35 11	2066	23 27 2	2054	25 19 13	2043	27 11 40	2034
	Regulus W.	13 56 1	2168	15 45 16	2138	17 35 17	2116	19 25 52	2098
	Spica E.	40 44 23	2059	38 52 21	2055	37 0 13	2053	35 8 2	2052
	Antares E.	86 22 54	2044	84 30 29	2040	82 37 57	2035	80 45 18	2032
26	Pollux W.	65 45 43	2060	67 37 43	2060	69 29 44	2061	71 21 43	2063
	Jupiter W.	36 36 27	2014	38 29 39	2013	40 22 53	2013	42 16 7	2014
	Regulus W.	28 43 37	2059	30 35 40	2057	32 27 46	2055	34 19 55	2055
	Saturn W.	21 13 55	2147	23 3 42	2128	24 53 58	2113	26 44 37	2102
	Antares E.	71 21 10	2026	69 28 17	2028	67 35 26	2029	65 42 37	2032
27	Pollux W.	80 40 37	2082	82 32 4	2088	84 23 21	2094	86 14 29	2102
	Jupiter W.	51 41 26	2032	53 34 11	2037	55 26 48	2043	57 19 15	2050
	Regulus W.	43 40 9	2069	45 31 56	2074	47 23 35	2080	49 15 5	2087
	Saturn W.	36 0 40	2085	37 52 2	2087	39 43 21	2090	41 34 36	2093
	Antares E.	56 19 51	2053	54 27 40	2060	52 35 39	2067	50 43 49	2074
	α Aquilæ E.	108 36 26	2679	106 59 18	2672	105 22 1	2668	103 44 39	2666
28	Pollux W.	95 27 1	2147	97 16 49	2157	99 6 21	2168	100 55 36	2180
	Jupiter W.	66 38 32	2092	68 29 43	2103	70 20 38	2113	72 11 17	2124
	Regulus W.	58 29 45	2128	60 20 1	2138	62 10 2	2149	63 59 47	2159
	Saturn W.	50 48 53	2127	52 39 11	2135	54 29 17	2144	56 19 9	2155
	Antares E.	41 27 43	2119	39 37 13	2130	37 46 59	2140	35 57 1	2152
	α Aquilæ E.	95 37 50	2681	94 0 45	2689	92 23 50	2698	90 47 7	2709
	Sun E.	133 29 44	2440	131 47 7	2450	130 4 44	2461	128 22 36	2473

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
21	α Arietis	W.	75 9 40	2429	76 52 34	2410	78 35 54	2392	80 19 40	2373
	Aldebaran	W.	43 7 21	2527	44 47 57	2502	46 29 8	2477	48 10 53	2454
	Jupiter	E.	29 55 3	2408	28 11 39	2394	26 27 56	2381	24 43 54	2370
	Regulus	E.	37 14 5	2434	35 31 19	2419	33 48 11	2402	32 4 39	2387
	Saturn	E.	45 42 30	2427	43 59 34	2411	42 16 15	2396	40 32 35	2382
	Spica	E.	91 14 27	2418	89 31 17	2400	87 47 42	2382	86 3 41	2364
22	Mars	W.	90 59 18	2498	92 40 34	2481	94 22 14	2464	96 4 18	2448
	α Arietis	W.	89 4 57	2287	90 51 15	2271	92 37 57	2255	94 25 2	2240
	Aldebaran	W.	56 47 35	2348	58 32 24	2329	60 17 41	2311	62 3 25	2293
	Regulus	E.	23 21 59	2327	21 36 39	2320	19 51 8	2316	18 5 32	2317
	Saturn	E.	31 49 27	2324	30 4 2	2316	28 18 26	2311	26 32 43	2308
	Spica	E.	77 17 14	2278	75 30 43	2262	73 43 47	2246	71 56 28	2231
23	Mars	W.	104 40 8	2374	106 24 20	2362	108 8 50	2349	109 53 38	2337
	α Arietis	W	103 25 57	2171	105 15 9	2159	107 4 39	2147	108 54 27	2135
	Aldebaran	W.	70 58 19	2213	72 46 27	2200	74 34 55	2187	76 23 42	2175
	Pollux	W.	29 1 47	2271	30 48 30	2247	32 35 48	2225	34 23 39	2204
	Spica	E.	62 54 26	2161	61 5 0	2149	59 15 15	2138	57 25 14	2126
	Antares	E.	108 36 1	2154	106 46 24	2141	104 56 28	2130	103 6 14	2118
24	Mars	W.	118 41 33	2289	120 27 48	2282	122 14 14	2276	124 0 49	2270
	Aldebaran	W.	85 31 55	2124	87 22 18	2117	89 12 52	2110	91 3 36	2103
	Pollux	W.	43 29 33	2129	45 19 48	2117	47 10 21	2107	49 1 9	2099
	Spica	E.	48 11 12	2081	46 19 44	2075	44 28 6	2069	42 36 18	2064
	Antares	E.	93 51 0	2070	91 59 15	2062	90 7 18	2056	88 15 11	2050
25	Aldebaran	W.	100 19 14	2085	102 10 36	2084	104 1 59	2084	105 53 23	2084
	Pollux	W.	58 18 4	2068	60 9 53	2065	62 1 46	2063	63 53 43	2061
	Jupiter	W.	29 4 21	2028	30 57 12	2023	32 50 11	2018	34 43 17	2015
	Regulus	W.	21 16 54	2086	23 8 15	2076	24 59 52	2068	26 51 40	2063
	Spica	E.	33 15 48	2052	31 23 34	2052	29 31 20	2053	27 39 9	2057
	Antares	E.	78 52 34	2030	76 59 46	2028	75 6 55	2027	73 14 3	2026
26	Pollux	W.	73 13 39	2065	75 5 32	2068	76 57 20	2072	78 49 2	2077
	Jupiter	W.	44 9 19	2016	46 2 28	2019	47 55 33	2022	49 48 33	2026
	Regulus	W.	36 12 3	2056	38 4 11	2058	39 56 15	2060	41 48 15	2064
	Saturn	W.	28 35 33	2094	30 26 41	2089	32 17 57	2086	34 9 18	2085
	Antares	E.	63 49 53	2035	61 57 13	2038	60 4 38	2043	58 12 11	2048
27	Pollux	W.	88 5 25	2110	89 56 9	2118	91 46 40	2127	93 36 58	2137
	Jupiter	W.	59 11 31	2057	61 3 36	2066	62 55 28	2074	64 47 7	2083
	Regulus	W.	51 6 25	2094	52 57 34	2102	54 48 31	2110	56 39 15	2119
	Saturn	W.	43 25 45	2098	45 16 47	2105	47 7 39	2111	48 58 21	2118
	Antares	E.	48 52 9	2082	47 0 42	2091	45 9 29	2100	43 18 29	2109
	α Aquilæ	E.	102 7 14	2665	100 29 48	2667	98 52 24	2670	97 15 4	2675
28	Pollux	W.	102 44 34	2192	104 33 14	2204	106 21 35	2217	108 9 38	2230
	Jupiter	W.	74 1 39	2135	75 51 44	2147	77 41 32	2159	79 31 1	2172
	Regulus	W.	65 49 16	2170	67 38 28	2182	69 27 22	2194	71 15 59	2206
	Saturn	W.	58 8 45	2165	59 58 6	2175	61 47 11	2186	63 35 59	2198
	Antares	E.	34 7 21	2163	32 17 58	2175	30 28 53	2188	28 40 7	2200
	α Aquilæ	E.	89 10 39	2720	87 34 26	2734	85 58 31	2748	84 22 55	2764
	Sun	E.	126 40 45	2485	124 59 10	2497	123 17 52	2509	121 36 51	2522

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Day of the Month.	Airy's Day Numbers—For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of E	F	G	H	Value of L
1	1·08499	1·60103	0·21213	1·33353	80·909
2	1·07634	1·59830	0·21290	1·33330	81·440
3	1·06766	1·59550	0·21366	1·33308	81·971
4	1·05897	1·59263	0·21441	1·33285	82·503
5	1·05027	1·58970	0·21515	1·33262	83·035
6	1·04157	1·58670	0·21589	1·33239	83·566
7	1·03286	1·58364	0·21661	1·33216	84·099
8	1·02415	1·58050	0·21732	1·33193	84·633
9	1·01546	1·57730	0·21803	1·33170	85·167
10	1·00679	1·57403	0·21872	1·33147	85·700
11	0·99816	1·57068	0·21940	1·33125	86·233
12	0·98956	1·56727	0·22008	1·33103	86·765
13	0·98101	1·56379	0·22076	1·33082	87·296
14	0·97251	1·56024	0·22143	1·33062	87·825
15	0·96408	1·55661	0·22208	1·33042	88·354
16	0·95571	1·55292	0·22272	1·33022	88·881
17	0·94743	1·54917	0·22335	1·33003	89·405
18	0·93923	1·54534	0·22397	1·32984	89·927
19	0·93114	1·54144	0·22459	1·32967	90·447
20	0·92317	1·53746	0·22520	1·32951	90·964
21	0·91532	1·53342	0·22581	1·32935	91·478
22	0·90761	1·52930	0·22641	1·32920	91·989
23	0·90006	1·52511	0·22700	1·32906	92·497
24	0·89267	1·52085	0·22758	1·32892	93·002
25	0·88544	1·51651	0·22816	1·32880	93·503
26	0·87839	1·51210	0·22873	1·32869	94·001
27	0·87155	1·50762	0·22930	1·32858	94·494
28	0·86493	1·50306	0·22986	1·32849	94·983
29	0·85854	1·49843	0·23041	1·32841	95·468

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Day of the Month.	Bessel's Day Numbers— For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of A	B	C	D	Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0d·207409. Days.	From Mean Noon of January 1. Day of the Year.	Fraction of the Year.*
					h m s			
1	—1·1085	+1·1733	+9·6333	—0·5371	3 12 46·73	316	31	·0849
2	1·1166	1·1660	9·6362	0·5386	3 8 50·82	317	32	·0876
3	1·1243	1·1584	9·6390	0·5401	3 4 54·91	318	33	·0904
4	—1·1318	+1·1505	+9·6419	—0·5415	3 0 59·00	319	34	·0931
5	1·1390	1·1423	9·6446	0·5430	2 57 3·09	320	35	·0958
6	1·1460	1·1339	9·6473	0·5444	2 53 7·18	321	36	·0986
7	—1·1527	+1·1251	+9·6500	—0·5458	2 49 11·27	322	37	·1013
8	1·1592	1·1160	9·6527	0·5472	2 45 15·36	323	38	·1040
9	1·1655	1·1066	9·6552	0·5486	2 41 19·46	324	39	·1068
10	—1·1715	+1·0969	+9·6578	—0·5500	2 37 23·55	325	40	·1095
11	1·1773	1·0868	9·6602	0·5513	2 33 27·64	326	41	·1123
12	1·1829	1·0763	9·6627	0·5526	2 29 31·73	327	42	·1150
13	—1·1883	+1·0654	+9·6651	—0·5539	2 25 35·82	328	43	·1177
14	1·1935	1·0542	9·6675	0·5551	2 21 39·91	329	44	·1205
15	1·1985	1·0424	9·6698	0·5563	2 17 44·00	330	45	·1232
16	—1·2033	+1·0303	+9·6721	—0·5575	2 13 48·09	331	46	·1259
17	1·2079	1·0176	9·6743	0·5586	2 9 52·18	332	47	·1287
18	1·2123	1·0044	9·6766	0·5597	2 5 56·27	333	48	·1314
19	—1·2166	+0·9907	+9·6787	—0·5607	2 2 0·37	334	49	·1342
20	1·2207	0·9764	9·6809	0·5617	1 58 4·46	335	50	·1369
21	1·2246	0·9615	9·6830	0·5626	1 54 8·55	336	51	·1396
22	—1·2283	+0·9460	+9·6851	—0·5635	1 50 12·64	337	52	·1424
23	1·2319	0·9297	9·6871	0·5643	1 46 16·73	338	53	·1451
24	1·2353	0·9127	9·6892	0·5651	1 42 20·82	339	54	·1478
25	—1·2385	+0·8948	+9·6911	—0·5658	1 38 24·92	340	55	·1506
26	1·2416	0·8760	9·6931	0·5664	1 34 29·01	341	56	·1533
27	1·2445	0·8563	9·6950	0·5670	1 30 33·10	342	57	·1561
28	1·2473	0·8355	9·6969	0·5676	1 26 37·19	343	58	·1588
29	—1·2499	+0·8135	+9·6988	—0·5680	1 22 41·28	344	59	·1615

* Add ·0031 if Fraction be required for the time *t*, see page 327.

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AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 hour.	THE SUN'S Apparent Declination.	Diff. for 1 hour.	Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, *to be added to Apparent Time.*	Diff. for 1 hour.
		h m s	s	° ′ ″	″	m s	m s	s
Frid.	1	22 49 39·42	9·341	S. 7 28 10·9	57·18	1 5·39	12 32·22	0·514
Sat.	2	22 53 23·60	9·322	7 5 18·7	57·43	1 5·32	12 19·88	0·534
Sun.	3	22 57 7·30	9·303	6 42 20·3	57·67	1 5·25	12 7·07	0·553
Mon.	4	23 0 50·56	9·285	6 19 16·2	57·89	1 5·18	11 53·81	0·571
Tues.	5	23 4 33·38	9·268	5 56 6·8	58·10	1 5·12	11 40·12	0·588
Wed.	6	23 8 15·80	9·251	5 32 52·4	58·29	1 5·06	11 26·02	0·604
Thur.	7	23 11 57·81	9·235	5 9 33·5	58·46	1 5·00	11 11·52	0·620
Frid.	8	23 15 39·45	9·220	4 46 10·5	58·61	1 4·94	10 56·64	0·635
Sat.	9	23 19 20·72	9·206	4 22 43·8	58·75	1 4·89	10 41·40	0·649
Sun.	10	23 23 1·66	9·192	3 59 13·7	58·87	1 4·84	10 25·82	0·662
Mon.	11	23 26 42·27	9·179	3 35 40·6	58·98	1 4·79	10 9·92	0·675
Tues.	12	23 30 22·56	9·167	3 12 5·1	59·07	1 4·74	9 53·72	0·687
Wed.	13	23 34 2·56	9·155	2 48 27·4	59·14	1 4·70	9 37·22	0·699
Thur.	14	23 37 42·29	9·144	2 24 48·1	59·19	1 4·66	9 20·44	0·710
Frid.	15	23 41 21·76	9·134	2 1 7·3	59·23	1 4·63	9 3·39	0·720
Sat.	16	23 45 0·97	9·125	1 37 25·7	59·26	1 4·60	8 46·10	0·729
Sun.	17	23 48 39·97	9·117	1 13 43·6	59·27	1 4·57	8 28·60	0·738
Mon.	18	23 52 18·77	9·109	0 50 1·2	59·26	1 4·54	8 10·89	0·746
Tues.	19	23 55 57·38	9·102	0 26 19·0	59·24	1 4·52	7 53·00	0·753
Wed.	20	23 59 35·83	9·096	S. 0 2 37·3	59·20	1 4·50	7 34·94	0·759
Thur.	21	0 3 14·13	9·091	N. 0 21 3·4	59·15	1 4·49	7 16·73	0·764
Frid.	22	0 6 52·30	9·087	0 44 43·0	59·08	1 4·47	6 58·40	0·768
Sat.	23	0 10 30·37	9·083	1 8 21·0	59·00	1 4·46	6 39·98	0·771
Sun.	24	0 14 8·37	9·081	1 31 57·1	58·91	1 4·45	6 21·48	0·773
Mon.	25	0 17 46·32	9·080	1 55 30·9	58·80	1 4·44	6 2·92	0·774
Tues.	26	0 21 24·25	9·080	2 19 2·2	58·68	1 4·44	5 44·34	0·775
Wed.	27	0 25 2·15	9·080	2 42 30·6	58·55	1 4·44	5 25·75	0·774
Thur.	28	0 28 40·08	9·082	3 5 55·9	58·40	1 4·45	5 7·17	0·772
Frid.	29	0 32 18·06	9·085	3 29 17·6	58·24	1 4·45	4 48·65	0·769
Sat.	30	0 35 56·09	9·089	3 52 35·4	58·07	1 4·46	4 30·18	0·766
Sun.	31	0 39 34·21	9·093	4 15 48·9	57·88	1 4·48	4 11·80	0·761
Mon.	32	0 43 12·45		N. 4 38 58·0		1 4·49	3 53·53	

*Mean Time of the Semidiameter passing may be found by subtracting 0ˢ·18 from the *Sidereal* Time.

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AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S *Apparent* Right Ascension.	THE SUN'S *Apparent* Declination.	THE SUN'S Semidiam.*	Equation of Time, *to be subtracted from Mean Time.*	Sidereal Time.
		h m s	° ′ ″	′ ″	m s	h m s
Frid.	1	22 49 37·46	S. 7 28 22·9	16 10·1	12 32·33	22 37 5·13
Sat.	2	22 53 21·68	7 5 30·5	16 9·9	12 19·99	22 41 1·69
Sun.	3	22 57 5·42	6 42 32·0	16 9·6	12 7·18	22 44 58·24
Mon.	4	23 0 48·72	6 19 27·7	16 9·4	11 53·92	22 48 54·80
Tues.	5	23 4 31·58	5 56 18·1	16 9·1	11 40·23	22 52 51·35
Wed.	6	23 8 14·04	5 33 3·5	16 8·8	11 26·14	22 56 47·90
Thur.	7	23 11 56·09	5 9 44·4	16 8·5	11 11·64	23 0 44·45
Frid.	8	23 15 37·77	4 46 21·2	16 8·3	10 56·76	23 4 41·01
Sat.	9	23 19 19·08	4 22 54·2	16 8·0	10 41·52	23 8 37·56
Sun.	10	23 23 0·06	3 59 23·9	16 7·8	10 25·94	23 12 34·12
Mon.	11	23 26 40·71	3 35 50·6	16 7·5	10 10·04	23 16 30·67
Tues.	12	23 30 21·05	3 12 14·8	16 7·2	9 53·83	23 20 27·22
Wed.	13	23 34 1·10	2 48 36·9	16 6·9	9 37·33	23 24 23·77
Thur.	14	23 37 40·87	2 24 57·3	16 6·7	9 20·55	23 28 20·32
Frid.	15	23 41 20·38	2 1 16·3	16 6·4	9 3·50	23 32 16·88
Sat.	16	23 44 59·64	1 37 34·4	16 6·2	8 46·21	23 36 13·43
Sun.	17	23 48 38·68	1 13 51·9	16 5·9	8 28·70	23 40 9·98
Mon.	18	23 52 17·53	0 50 9·2	16 5·6	8 10·99	23 44 6·54
Tues.	19	23 55 56·19	0 26 26·8	16 5·3	7 53·10	23 48 3·09
Wed.	20	23 59 34·68	S. 0 2 44·8	16 5·1	7 35·04	23 51 59·64
Thur.	21	0 3 13·02	N. 0 20 56·3	16 4·8	7 16·82	23 55 56·19
Frid.	22	0 6 51·24	0 44 36·2	16 4·6	6 58·49	23 59 52·75
Sat.	23	0 10 29·36	1 8 14·4	16 4·3	6 40·06	0 3 49·30
Sun.	24	0 14 7·41	1 31 50·8	16 4·0	6 21·55	0 7 45·86
Mon.	25	0 17 45·41	1 55 25·0	16 3·7	6 3·00	0 11 42·41
Tues.	26	0 21 23·38	2 18 56·6	16 3·5	5 44·42	0 15 38·96
Wed.	27	0 25 1·33	2 42 25·3	16 3·2	5 25·82	0 19 35·51
Thur.	28	0 28 39·31	3 5 50·9	16 2·9	5 7·24	0 23 32·07
Frid.	29	0 32 17·33	3 29 12·9	16 2·6	4 48·71	0 27 28·62
Sat.	30	0 35 55·41	3 52 31·0	16 2·3	4 30·24	0 31 25·17
Sun.	31	0 39 33·57	4 15 44·9	16 2·0	4 11·85	0 35 21·72
Mon.	32	0 43 11·86	N. 4 38 54·3	16 1·7	3 53·58	0 39 18·28

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

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MEAN TIME.

Day of the Month.	THE SUN'S *Apparent* Longitude. *Noon.*	THE SUN'S *Apparent* Latitude. *Noon.*	Logarithm of the Radius Vector of the Earth. *Noon.*	THE MOON'S Semidiameter. *Noon.*	THE MOON'S Semidiameter. *Midnight.*	THE MOON'S Horizontal Parallax. *Noon.*	THE MOON'S Horizontal Parallax. *Midnight.*
	° ′ ″	″		′ ″	′ ″	′ ″	′ ″
1	340 55 51·9	S. 0·65	9·9562888	16 20·6	16 15·0	59 50·5	59 30·0
2	341 55 59·2	0·60	9·9964018	16 9·1	16 2·9	59 8·3	58 45·8
3	342 56 5·0	0·52	9·9965160	15 56·7	15 50·5	58 23·0	58 0·3
4	343 56 9·2	0·42	9·9966314	15 44·4	15 38·6	57 38·0	57 16·5
5	344 56 11·9	0·29	9·9967477	15 32·9	15 27·6	56 55·8	56 36·2
6	345 56 12·9	0·16	9·9968647	15 22·5	15 17·7	56 17·7	56 0·3
7	346 56 12·2	S. 0·02	9·9969824	15 13·3	15 9·2	55 44·1	55 29·1
8	347 56 9·8	N. 0·11	9·9971006	15 5·5	15 2·0	55 15·3	55 2·5
9	348 56 5·6	0·24	9·9972191	14 58·8	14 55·9	54 50·9	54 40·3
10	349 55 59·7	0·36	9·9973378	14 53·3	14 51·0	54 30·8	54 22·4
11	350 55 51·9	0·45	9·9974567	14 49·0	14 47·3	54 15·1	54 8·9
12	351 55 42·2	0·51	9·9975757	14 46·0	14 45·0	54 4·0	54 0·3
13	352 55 30·4	0·55	9·9976947	14 44·4	14 44·2	53 58·1	53 57·3
14	353 55 16·4	0·56	9·9978138	14 44·4	14 45·1	53 58·1	54 0·6
15	354 55 0·3	0·53	9·9979330	14 46·2	14 47·9	54 4·9	54 11·1
16	355 54 42·0	0·47	9·9980524	14 50·2	14 53·1	54 19·4	54 29·9
17	356 54 21·4	0·39	9·9981720	14 56·5	15 0·6	54 42·5	54 57·4
18	357 53 58·6	0·29	9·9982919	15 5·3	15 10·6	55 14·6	55 34·1
19	358 53 33·4	0·17	9·9984122	15 16·5	15 23·0	55 55·7	56 19·4
20	359 53 5·9	N. 0·04	9·9985329	15 29·9	15 37·3	56 44·9	57 12·0
21	0 52 36·0	S. 0·08	9·9986542	15 45·1	15 53·0	57 40·3	58 9·5
22	1 52 3·9	0·20	9·9987762	16 1·1	16 9·0	58 38·9	59 8·0
23	2 51 29·5	0·32	9·9988988	16 16·7	16 23·8	59 36·0	60 2·2
24	3 50 52·9	0·41	9·9990222	16 30·3	16 35·9	60 26·0	60 46·5
25	4 50 14·2	0·48	9·9991464	16 40·5	16 43·8	61 3·2	61 15·4
26	5 49 33·4	0·52	9·9992714	16 45·9	16 46·5	61 22·9	61 25·2
27	6 48 50·5	0·54	9·9993972	16 45·7	16 43·6	61 22·5	61 14·8
28	7 48 5·6	0·52	9·9995236	16 40·3	16 35·7	61 2·5	60 45·9
29	8 47 18·7	0·48	9·9996506	16 30·3	16 24·0	60 25·9	60 2·9
30	9 46 29·9	0·40	9·9997781	16 17·1	16 9·8	59 37·7	59 11·0
31	10 45 39·4	0·30	9·9999059	16 2·3	15 54·8	58 43·5	58 15·8
32	11 44 47·2	S. 0·18	0·0000340	15 47·2	15 40·0	57 48·3	57 21·7

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MEAN TIME.

THE MOON'S

Day of the Week.	Day of the Month.	Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.	Age. Noon.	Meridian Passage.
		° ′ ″	° ′ ″	° ′ ″	° ′ ″	d	h m
Frid.	1	220 52 38·4	228 4 42·7	S. 4 50 12·9	S. 4 35 12·3	19·7	16 28·3
Sat.	2	235 11 4·4	242 11 32·7	4 16 7·1	3 53 25·1	20·7	17 26·9
Sun.	3	249 6 6·5	255 54 52·2	3 27 35·7	2 59 9·5	21·7	18 25·5
Mon.	4	262 38 2·7	269 15 55·7	2 28 36·7	1 56 26·3	22·7	19 22·5
Tues.	5	275 48 52·1	282 17 15·0	1 23 8·1	S. 0 49 9·1	23·7	20 16·5
Wed.	6	288 41 28·6	295 1 56·9	S. 0 14 56·0	N. 0 19 6·6	24·7	21 7·0
Thur.	7	301 19 3·2	307 33 8·9	N. 0 52 34·8	1 25 6·6	25·7	21 54·0
Frid.	8	313 44 34·2	319 53 36·7	1 56 20·8	2 25 58·8	26·7	22 38·1
Sat.	9	326 0 32·1	332 5 34·1	2 53 42·4	3 19 15·5	27·7	23 20·0
Sun.	10	338 8 54·6	344 10 44·1	3 42 23·7	4 2 53·8	28·7	6
Mon.	11	350 11 11·9	356 10 26·9	4 20 34·9	4 35 18·3	29·7	0 0·6
Tues.	12	2 8 38·1	8 5 54·9	4 46 56·5	4 55 24·1	0·9	0 40·9
Wed.	13	14 2 27·5	19 58 27·8	5 0 37·2	5 2 34·2	1·9	1 21·7
Thur.	14	25 54 9·4	31 49 48·2	5 1 14·6	4 56 39·8	2·9	2 3·7
Frid.	15	37 45 42·5	43 42 13·3	4 48 52·3	4 37 55·8	3·9	2 47·8
Sat.	16	49 39 44·2	55 38 41·6	4 23 55·6	4 6 57·3	4·9	3 34·4
Sun.	17	61 39 34·7	67 42 54·9	3 47 8·9	3 24 38·7	5·9	4 23·6
Mon.	18	73 49 15·7	79 59 12·3	2 59 36·3	2 32 13·1	6·9	5 15·2
Tues.	19	86 13 21·2	92 32 19·0	2 2 42·3	1 31 18·2	7·9	6 8·5
Wed.	20	98 56 41·6	105 27 2·7	N. 0 58 18·8	N. 0 24 4·0	8·9	7 2·5
Thur.	21	112 3 53·6	118 47 40·5	S. 0 11 3·3	S. 0 46 36·8	9·9	7 56·4
Frid.	22	125 38 43·0	132 37 12·4	1 22 6·1	1 56 58·6	10·9	8 49·5
Sat.	23	139 43 9·5	146 56 22·9	2 30 37·9	3 2 24·4	11·9	9 41·8
Sun.	24	154 16 28·2	161 42 45·8	3 31 38·9	3 57 41·3	12·9	10 33·8
Mon.	25	169 14 22·7	176 50 11·9	4 19 53·5	4 37 41·8	13·9	11 26·1
Tues.	26	184 28 56·3	192 9 10·2	4 50 38·6	4 58 23·6	14·9	12 19·9
Wed.	27	199 49 23·9	207 28 9·1	5 0 45·9	4 57 44·1	15·9	13 15·9
Thur.	28	215 4 1·3	222 35 45·1	4 49 26·8	4 36 10·6	16·9	14 14·5
Frid.	29	230 2 16·5	237 22 45·0	4 18 20·0	3 56 25·2	17·9	15 15·0
Sat.	30	244 36 34·3	251 43 22·4	3 30 59·2	3 2 37·9	18·9	16 15·9
Sun.	31	258 42 59·5	265 35 28·5	2 31 57·5	1 59 33·3	19·9	17 15·5
Mon.	32	272 21 1·0	278 59 56·7	S. 1 25 58·4	S. 0 51 44·8	20·9	18 11·8

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec for 10m.
	FRIDAY 1.				*SUNDAY* 3.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	14 27 23·89	S. 19 41 27·3	104·62	0	16 27 16·01	S. 25 15 2·8	30·54
1	14 29 50·78	19 51 55·0	103·26	1	16 29 47·12	25 18 6·1	28·90
2	14 32 17·84	20 2 14·6	101·89	2	16 32 18·19	25 20 59·5	27·27
3	14 34 45·08	20 12 26·0	100·51	3	16 34 49·21	25 23 43·1	25·63
4	14 37 12·49	20 22 29·1	99·12	4	16 37 20·17	25 26 16·9	24·00
5	14 39 40·07	20 32 23·8	97·71	5	16 39 51·07	25 28 40·9	22·37
6	14 42 7·82	20 42 10·1	96·30	6	16 42 21·91	25 30 55·1	20·74
7	14 44 35·73	20 51 47·9	94·88	7	16 44 52·67	25 32 59·6	19·11
8	14 47 3·81	21 1 17·1	93·44	8	16 47 23·35	25 34 54·2	17·49
9	14 49 32·05	21 10 37·8	92·00	9	16 49 53·95	25 36 39·1	15·86
10	14 52 0·44	21 19 49·8	90·54	10	16 52 24·45	25 38 14·3	14·24
11	14 54 28·99	21 28 53·1	89·08	11	16 54 54·85	25 39 39·8	12·62
12	14 56 57·69	21 37 47·6	87·61	12	16 57 25·15	25 40 55·5	11·00
13	14 59 26·54	21 46 33·2	86·12	13	16 59 55·34	25 42 1·5	9·39
14	15 1 55·53	21 55 10·0	84·63	14	17 2 25·41	25 42 57·9	7·79
15	15 4 24·67	22 3 37·8	83·13	15	17 4 55·35	25 43 44·6	6·18
16	15 6 53·94	22 11 56·6	81·63	16	17 7 25·16	25 44 21·7	4·58
17	15 9 23·34	22 20 6·4	80·12	17	17 9 54·84	25 44 49·2	2·98
18	15 11 52·88	22 28 7·1	78·59	18	17 12 24·37	25 45 7·1	1·39
19	15 14 22·54	22 35 58·7	77·06	19	17 14 53·76	25 45 15·5	0·19
20	15 16 52·32	22 43 41·0	75·53	20	17 17 22·99	25 45 14·4	1·77
21	15 19 22·22	22 51 14·2	73·98	21	17 19 52·06	25 45 3·7	3·35
22	15 21 52·24	22 58 38·1	72·43	22	17 22 20·97	25 44 43·6	4·92
23	15 24 22·37	S. 23 5 52·7	70·87	23	17 24 49·70	S. 25 44 14·1	6·49
	SATURDAY 2.				*MONDAY* 4.		
0	15 26 52·59	S. 23 12 57·9	69·31	0	17 27 18·25	S. 25 43 35·2	8·05
1	15 29 22·92	23 19 53·8	67·74	1	17 29 46·62	25 42 46·9	9·60
2	15 31 53·34	23 26 40·2	66·16	2	17 32 14·80	25 41 49·3	11·15
3	15 34 23·85	23 33 17·1	64·57	3	17 34 42·78	25 40 42·4	12·69
4	15 36 54·45	23 39 44·6	62·99	4	17 37 10·56	25 39 26·2	14·22
5	15 39 25·13	23 46 2·5	61·39	5	17 39 38·14	25 38 0·8	15·75
6	15 41 55·88	23 52 10·9	59·80	6	17 42 5·51	25 36 26·3	17·27
7	15 44 26·71	23 58 9·7	58·19	7	17 44 32·66	25 34 42·7	18·78
8	15 46 57·60	24 3 58·8	56·59	8	17 46 59·58	25 32 50·0	20·29
9	15 49 28·55	24 9 38·4	54·98	9	17 49 26·28	25 30 48·3	21·78
10	15 51 59·55	24 15 8·2	53·36	10	17 51 52·75	25 28 37·6	23·27
11	15 54 30·60	24 20 28·4	51·75	11	17 54 18·98	25 26 17·9	24·75
12	15 57 1·69	24 25 38·9	50·13	12	17 56 44·97	25 23 49·4	26·22
13	15 59 32·82	24 30 39·7	48·50	13	17 59 10·71	25 21 12·1	27·69
14	16 2 3·98	24 35 30·7	46·88	14	18 1 36·20	25 18 26·0	29·14
15	16 4 35·17	24 40 12·0	45·25	15	18 4 1·43	25 15 31·1	30·59
16	16 7 6·38	24 44 43·5	43·62	16	18 6 26·40	25 12 27·6	32·02
17	16 9 37·60	24 49 5·2	41·99	17	18 8 51·11	25 9 15·4	33·45
18	16 12 8·83	24 53 17·1	40·36	18	18 11 15·55	25 5 54·7	34·87
19	16 14 40·06	24 57 19·3	38·72	19	18 13 39·71	25 2 25·5	36·28
20	16 17 11·28	25 1 11·6	37·09	20	18 16 3·60	24 58 47·8	37·68
21	16 19 42·49	25 4 54·1	35·45	21	18 18 27·21	24 55 1·7	39·08
22	16 22 13·69	25 8 26·8	33·82	22	18 20 50·53	24 51 7·2	40·46
23	16 24 44·87	25 11 49·7	32·18	23	18 23 13·56	24 47 4·5	41·83
24	16 27 16·01	S. 25 15 2·8		24	18 25 36·30	S. 24 42 53·5	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 5.		
	h m s	° ′ ″	″
0	18 25 36·30	S. 24 42 53·5	43·20
1	18 27 58·75	24 38 34·3	44·55
2	18 30 20·89	24 34 7·0	45·89
3	18 32 42·74	24 29 31·7	47·23
4	18 35 4·28	24 24 48·3	48·55
5	18 37 25·51	24 19 57·0	49·86
6	18 39 46·43	24 14 57·8	51·16
7	18 42 7·04	24 9 50·8	52·45
8	18 44 27·33	24 4 36·1	53·73
9	18 46 47·31	23 59 13·7	55·01
10	18 49 6·96	23 53 43·7	56·27
11	18 51 26·29	23 48 6·1	57·51
12	18 53 45·29	23 42 21·0	58·75
13	18 56 3·97	23 36 28·5	59·97
14	18 58 22·32	23 30 28·7	61·19
15	19 0 40·34	23 24 21·5	62·39
16	19 2 58·02	23 18 7·1	63·59
17	19 5 15·37	23 11 45·6	64·77
18	19 7 32·39	23 5 17·0	65·94
19	19 9 49·07	22 58 41·3	67·10
20	19 12 5·41	22 51 58·7	68·25
21	19 14 21·41	22 45 9·2	69·39
22	19 16 37·07	22 38 12·9	70·52
23	19 18 52·39	S. 22 31 9·8	71·63
	WEDNESDAY 6.		
0	19 21 7·37	S. 22 24 0·0	72·73
1	19 23 22·08	22 16 43·6	73·82
2	19 25 36·29	22 9 20·7	74·90
3	19 27 50·24	22 1 51·3	75·97
4	19 30 3·85	21 54 15·4	77·03
5	19 32 17·11	21 46 33·2	78·08
6	19 34 30·02	21 38 44·7	79·11
7	19 36 42·59	21 30 50·1	80·14
8	19 38 54·82	21 22 49·2	81·15
9	19 41 6·70	21 14 42·3	82·15
10	19 43 18·24	21 6 29·4	83·14
11	19 45 29·44	20 58 10·6	84·12
12	19 47 40·29	20 49 45·9	85·08
13	19 49 50·80	20 41 15·4	86·04
14	19 52 0·97	20 32 39·2	86·98
15	19 54 10·80	20 23 57·3	87·91
16	19 56 20·29	20 15 9·8	88·83
17	19 58 29·44	20 6 16·8	89·74
18	20 0 38·25	19 57 18·4	90·64
19	20 2 46·72	19 48 14·6	91·52
20	20 4 54·86	19 39 5·4	92·40
21	20 7 2·66	19 29 51·0	93·26
22	20 9 10·13	19 20 31·4	94·11
23	20 11 17·27	19 11 6·8	94·95
24	20 13 24·07	S. 19 1 37·1	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 7.		
	h m s	° ′ ″	″
0	20 13 24·07	S. 19 1 37·1	95·78
1	20 15 30·54	18 52 2·4	96·60
2	20 17 36·69	18 42 22·8	97·41
3	20 19 42·51	18 32 38·4	98·21
4	20 21 48·00	18 22 49·1	98·99
5	20 23 53·17	18 12 55·1	99·77
6	20 25 58·02	18 2 56·6	100·53
7	20 28 2·55	17 52 53·4	101·28
8	20 30 6·76	17 42 45·7	102·02
9	20 32 10·66	17 32 33·6	102·75
10	20 34 14·25	17 22 17·0	103·47
11	20 36 17·52	17 11 56·2	104·18
12	20 38 20·49	17 1 31·1	104·87
13	20 40 23·15	16 51 1·9	105·56
14	20 42 25·50	16 40 28·5	106·24
15	20 44 27·56	16 29 51·0	106·91
16	20 46 29·31	16 19 9·6	107·56
17	20 48 30·77	16 8 24·2	108·21
18	20 50 31·94	15 57 35·0	108·84
19	20 52 32·81	15 46 41·9	109·47
20	20 54 33·39	15 35 45·1	110·08
21	20 56 33·69	15 24 44·6	110·68
22	20 58 33·70	15 13 40·5	111·28
23	21 0 33·43	S. 15 2 32·8	111·86
	FRIDAY 8.		
0	21 2 32·88	S. 14 51 21·7	112·43
1	21 4 32·06	14 40 7·1	113·00
2	21 6 30·96	14 28 49·1	113·55
3	21 8 29·59	14 17 27·8	114·09
4	21 10 27·96	14 6 3·3	114·62
5	21 12 26·06	13 54 35·5	115·15
6	21 14 23·90	13 43 4·6	115·66
7	21 16 21·48	13 31 30·7	116·16
8	21 18 18·80	13 19 53·7	116·65
9	21 20 15·87	13 8 13·8	117·14
10	21 22 12·69	12 56 31·0	117·61
11	21 24 9·27	12 44 45·3	118·07
12	21 26 5·60	12 32 56·8	118·53
13	21 28 1·69	12 21 5·6	118·97
14	21 29 57·55	12 9 11·8	119·40
15	21 31 53·17	11 57 15·4	119·83
16	21 33 48·57	11 45 16·4	120·25
17	21 35 43·73	11 33 14·9	120·65
18	21 37 38·67	11 21 11·0	121·05
19	21 39 33·39	11 9 4·7	121·44
20	21 41 27·89	10 56 56·1	121·81
21	21 43 22·18	10 44 45·2	122·18
22	21 45 16·25	10 32 32·1	122·54
23	21 47 10·12	10 20 16·9	122·89
24	21 49 3·78	S. 10 7 59·6	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 9.				*MONDAY* 11.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	21 49 3·78	S. 10 7 59·6	123·23	0	23 17 6·64	N. 0 6 14·2	129·69
1	21 50 57·24	9 55 40·2	123·57	1	23 18 54·52	0 19 12·4	129·64
2	21 52 50·51	9 43 18·8	123·89	2	23 20 42·36	0 32 10·2	129·57
3	21 54 43·58	9 30 55·4	124·21	3	23 22 30·18	0 45 7·7	129·50
4	21 56 36·46	9 18 30·2	124·51	4	23 24 17·97	0 58 4·7	129·42
5	21 58 29·15	9 6 3·1	124·81	5	23 26 5·74	1 11 1·2	129·33
6	22 0 21·66	8 53 34·3	125·10	6	23 27 53·49	1 23 57·1	129·23
7	22 2 13·98	8 41 3·7	125·38	7	23 29 41·23	1 36 52·5	129·13
8	22 4 6·13	8 28 31·4	125·65	8	23 31 28·96	1 49 47·3	129·02
9	22 5 58·11	8 15 57·5	125·91	9	23 33 16·68	2 2 41·4	128·90
10	22 7 49·91	8 3 22·1	126·16	10	23 35 4·40	2 15 34·8	128·77
11	22 9 41·55	7 50 45·1	126·41	11	23 36 52·12	2 28 27·4	128·64
12	22 11 33·03	7 38 6·7	126·64	12	23 38 39·84	2 41 19·2	128·50
13	22 13 24·35	7 25 26·9	126·87	13	23 40 27·57	2 54 10·2	128·35
14	22 15 15·51	7 12 45·6	127·09	14	23 42 15·31	3 7 0·3	128·19
15	22 17 6·51	7 0 3·1	127·30	15	23 44 3·06	3 19 49·4	128·03
16	22 18 57·36	6 47 19·3	127·50	16	23 45 50·82	3 32 37·6	127·86
17	22 20 48·07	6 34 34·3	127·69	17	23 47 38·61	3 45 24·8	127·68
18	22 22 38·64	6 21 48·1	127·88	18	23 49 26·42	3 58 10·9	127·50
19	22 24 29·06	6 9 0·8	128·05	19	23 51 14·25	4 10 55·8	127·30
20	22 26 19·35	5 56 12·5	128·22	20	23 53 2·12	4 23 39·7	127·10
21	22 28 9·51	5 43 23·2	128·38	21	23 54 50·02	4 36 22·3	126·90
22	22 29 59·54	5 30 32·9	128·53	22	23 56 37·95	4 49 3·7	126·68
23	22 31 49·45	S. 5 17 41·6	128·68	23	23 58 25·93	N. 5 1 43·8	126·46
	SUNDAY 10.				*TUESDAY* 12.		
0	22 33 39·23	S. 5 4 49·6	128·82	0	0 0 13·94	N. 5 14 22·5	126·24
1	22 35 28·90	4 51 56·7	128·94	1	0 2 2·00	5 26 59·9	126·00
2	22 37 18·45	4 39 3·1	129·06	2	0 3 50·12	5 39 35·9	125·76
3	22 39 7·89	4 26 8·7	129·17	3	0 5 38·28	5 52 10·5	125·51
4	22 40 57·22	4 13 13·6	129·28	4	0 7 26·50	6 4 43·5	125·25
5	22 42 46·45	4 0 18·0	129·37	5	0 9 14·78	6 17 15·0	124·98
6	22 44 35·58	3 47 21·7	129·46	6	0 11 3·13	6 29 44·9	124·71
7	22 46 24·61	3 34 25·0	129·54	7	0 12 51·54	6 42 13·2	124·43
8	22 48 13·55	3 21 27·7	129·61	8	0 14 40·01	6 54 39·8	124·15
9	22 50 2·40	3 8 30·1	129·67	9	0 16 28·56	7 7 4·7	123·85
10	22 51 51·16	2 55 32·0	129·73	10	0 18 17·19	7 19 27·8	123·55
11	22 53 39·84	2 42 33·7	129·77	11	0 20 5·89	7 31 49·1	123·24
12	22 55 28·43	2 29 35·1	129·81	12	0 21 54·67	7 44 8·5	122·92
13	22 57 16·95	2 16 36·2	129·85	13	0 23 43·54	7 56 26·1	122·60
14	22 59 5·40	2 3 37·1	129·87	14	0 25 32·50	8 8 41·7	122·27
15	23 0 53·78	1 50 37·9	129·89	15	0 27 21·55	8 20 55·3	121·93
16	23 2 42·09	1 37 38·6	129·90	16	0 29 10·69	8 33 6·9	121·59
17	23 4 30·34	1 24 39·2	129·90	17	0 30 59·92	8 45 16·4	121·24
18	23 6 18·53	1 11 39·8	129·89	18	0 32 49·26	8 57 23·9	120·88
19	23 8 6·67	0 58 40·5	129·88	19	0 34 38·70	9 9 29·1	120·51
20	23 9 54·75	0 45 41·2	129·86	20	0 36 28·25	9 21 32·2	120·14
21	23 11 42·79	0 32 42·0	129·83	21	0 38 17·91	9 33 33·0	119·76
22	23 13 30·78	0 19 43·0	129·79	22	0 40 7·68	9 45 31·6	119·37
23	23 15 18·73	S. 0 6 44·3	129·75	23	0 41 57·57	9 57 27·8	118·97
24	23 17 6·64	N. 0 6 14·2		24	0 43 47·57	N. 10 9 21·7	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 13.				*FRIDAY* 15.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	0 43 47·57	N.10 9 21·7	118·57	0	2 14 59·99	N.18 39 27·5	90·48
1	0 45 37·69	10 21 13·1	118·16	1	2 16 58·97	18 48 30·4	89·70
2	0 47 27·94	10 33 2·1	117·75	2	2 18 58·19	18 57 28·6	88·92
3	0 49 18·32	10 44 48·6	117·32	3	2 20 57·64	19 6 22·1	88·14
4	0 51 8·83	10 56 32·5	116·89	4	2 22 57·34	19 15 10·9	87·34
5	0 52 59·47	11 8 13·9	116·45	5	2 24 57·27	19 23 55·0	86·54
6	0 54 50·24	11 19 52·6	116·01	6	2 26 57·44	19 32 34·2	85·72
7	0 56 41·15	11 31 28·6	115·55	7	2 28 57·86	19 41 8·5	84·90
8	0 58 32·21	11 43 1·9	115·09	8	2 30 58·52	19 49 37·9	84·08
9	1 0 23·41	11 54 32·5	114·62	9	2 32 59·42	19 58 2·4	83·24
10	1 2 14·75	12 6 0·2	114·15	10	2 35 0·57	20 6 21·9	82·40
11	1 4 6·25	12 17 25·1	113·66	11	2 37 1·96	20 14 36·3	81·55
12	1 5 57·90	12 28 47·1	113·17	12	2 39 3·60	20 22 45·5	80·69
13	1 7 49·71	12 40 6·1	112·67	13	2 41 5·49	20 30 49·6	79·82
14	1 9 41·67	12 51 22·2	112·17	14	2 43 7·62	20 38 48·5	78·94
15	1 11 33·79	13 2 35·2	111·66	15	2 45 10·01	20 46 42·2	78·06
16	1 13 26·08	13 13 45·1	111·14	16	2 47 12·65	20 54 30·5	77·17
17	1 15 18·53	13 24 52·0	110·61	17	2 49 15·54	21 2 13·5	76·27
18	1 17 11·15	13 35 55·6	110·07	18	2 51 18·68	21 9 51·1	75·36
19	1 19 3·94	13 46 56·0	109·53	19	2 53 22·07	21 17 23·3	74·45
20	1 20 56·91	13 57 53·2	108·98	20	2 55 25·72	21 24 50·0	73·52
21	1 22 50·06	14 8 47·1	108·42	21	2 57 29·62	21 32 11·1	72·59
22	1 24 43·38	14 19 37·6	107·86	22	2 59 33·78	21 39 26·7	71·65
23	1 26 36·88	N.14 30 24·7	107·28	23	3 1 38·19	N.21 46 36·6	70·70
	THURSDAY 14.				*SATURDAY* 16.		
0	1 28 30·56	N.14 41 8·4	106·70	0	3 3 42·85	N.21 53 40·8	69·73
1	1 30 24·43	14 51 48·6	106·11	1	3 5 47·77	22 0 39·2	68·77
2	1 32 18·50	15 2 25·3	105·52	2	3 7 52·94	22 7 31·9	67·80
3	1 34 12·75	15 12 58·4	104·92	3	3 9 58·36	22 14 18·7	66·83
4	1 36 7·19	15 23 27·9	104·31	4	3 12 4·04	22 20 59·6	65·84
5	1 38 1·84	15 33 53·8	103·69	5	3 14 9·98	22 27 34·7	64·85
6	1 39 56·68	15 44 15·9	103·06	6	3 16 16·16	22 34 3·8	63·85
7	1 41 51·72	15 54 34·3	102·43	7	3 18 22·60	22 40 27·0	62·85
8	1 43 46·96	16 4 48·9	101·79	8	3 20 29·30	22 46 44·1	61·84
9	1 45 42·40	16 14 59·6	101·14	9	3 22 36·25	22 52 55·1	60·82
10	1 47 38·05	16 25 6·4	100·48	10	3 24 43·45	22 59 0·0	59·79
11	1 49 33·91	16 35 9·3	99·82	11	3 26 50·90	23 4 58·8	58·75
12	1 51 29·98	16 45 8·2	99·15	12	3 28 58·60	23 10 51·3	57·69
13	1 53 26·27	16 55 3·1	98·47	13	3 31 6·56	23 16 37·4	56·63
14	1 55 22·77	17 4 53·9	97·78	14	3 33 14·76	23 22 17·2	55·57
15	1 57 19·48	17 14 40·6	97·09	15	3 35 23·21	23 27 50·6	54·50
16	1 59 16·42	17 24 23·1	96·38	16	3 37 31·91	23 33 17·6	53·42
17	2 1 13·58	17 34 1·4	95·67	17	3 39 40·86	23 38 38·2	52·34
18	2 3 10·95	17 43 35·4	94·95	18	3 41 50·06	23 43 52·2	51·25
19	2 5 8·56	17 53 5·1	94·23	19	3 43 59·50	23 48 59·7	50·15
20	2 7 6·39	18 2 30·5	93·49	20	3 46 9·18	23 54 0·6	49·04
21	2 9 4·44	18 11 51·5	92·75	21	3 48 19·11	23 58 54·8	47·92
22	2 11 2·73	18 21 8·0	92·00	22	3 50 29·28	24 3 42·4	46·80
23	2 13 1·25	18 30 20·0	91·24	23	3 52 39·69	24 8 23·2	45·68
24	2 14 59·99	N.18 39 27·5		24	3 54 50·33	N.24 12 57·2	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SUNDAY 17.				*TUESDAY* 19.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	3 54 50·33	N.24 12 57·2	44·54	0	5 43 16·47	N.25 26 55·3	16·99
1	3 57 1·21	24 17 24·4	43·40	1	5 45 35·67	25 25 13·3	18·38
2	3 59 12·33	24 21 44·8	42·25	2	5 47 54·95	25 23 23·1	19·77
3	4 1 23·69	24 25 58·3	41·09	3	5 50 14·32	25 21 24·4	21·16
4	4 3 35·28	24 30 4·8	39·92	4	5 52 33·77	25 19 17·4	22·55
5	4 5 47·10	24 34 4·4	38·75	5	5 54 53·30	25 17 2·1	23·95
6	4 7 59·14	24 37 56·9	37·57	6	5 57 12·90	25 14 38·4	25·35
7	4 10 11·41	24 41 42·4	36·39	7	5 59 32·57	25 12 6·3	26·75
8	4 12 23·91	24 45 20·7	35·20	8	6 1 52·30	25 9 25·8	28·15
9	4 14 36·63	24 48 51·9	34·00	9	6 4 12·10	25 6 37·0	29·55
10	4 16 49·57	24 52 15·9	32·79	10	6 6 31·95	25 3 39·7	30·95
11	4 19 2·72	24 55 32·6	31·58	11	6 8 51·86	25 0 34·0	32·35
12	4 21 16·09	24 58 42·1	30·36	12	6 11 11·82	24 57 19·9	33·75
13	4 23 29·67	25 1 44·3	29·14	13	6 13 31·83	24 53 57·4	35·15
14	4 25 43·47	25 4 39·1	27·91	14	6 15 51·87	24 50 26·5	36·56
15	4 27 57·47	25 7 26·5	26·67	15	6 18 11·96	24 46 47·1	37·96
16	4 30 11·68	25 10 6·5	25·42	16	6 20 32·08	24 42 59·4	39·37
17	4 32 26·09	25 12 39·1	24·17	17	6 22 52·23	24 39 3·2	40·77
18	4 34 40·70	25 15 4·1	22·92	18	6 25 12·41	24 34 58·5	42·17
19	4 36 55·51	25 17 21·6	21·66	19	6 27 32·61	24 30 45·5	43·58
20	4 39 10·51	25 19 31·6	20·39	20	6 29 52·83	24 26 24·0	44·98
21	4 41 25·71	25 21 34·0	19·12	21	6 32 13·07	24 21 54·1	46·38
22	4 43 41·09	25 23 28·7	17·84	22	6 34 33·32	24 17 15·8	47·79
23	4 45 56·66	N.25 25 15·7	16·56	23	6 36 53·58	N.24 12 29·1	49·19
	MONDAY 18.				*WEDNESDAY* 20.		
0	4 48 12·41	N.25 26 55·1	15·27	0	6 39 13·85	N.24 7 34·0	50·59
1	4 50 28·34	25 28 26·7	13·98	1	6 41 34·12	24 2 30·5	51·98
2	4 52 44·45	25 29 50·6	12·68	2	6 43 54·39	23 57 18·6	53·38
3	4 55 0·73	25 31 6·7	11·37	3	6 46 14·65	23 51 58·3	54·77
4	4 57 17·18	25 32 14·9	10·06	4	6 48 34·90	23 46 29·7	56·17
5	4 59 33·80	25 33 15·3	8·75	5	6 50 55·14	23 40 52·7	57·56
6	5 1 50·58	25 34 7·8	7·43	6	6 53 15·37	23 35 7·3	58·95
7	5 4 7·51	25 34 52·4	6·11	7	6 55 35·57	23 29 13·6	60·33
8	5 6 24·61	25 35 29·0	4·78	8	6 57 55·76	23 23 11·6	61·72
9	5 8 41·86	25 35 57·7	3·45	9	7 0 15·93	23 17 1·3	63·10
10	5 10 59·26	25 36 18·4	2·11	10	7 2 36·07	23 10 42·7	64·48
11	5 13 16·80	25 36 31·1	0·77	11	7 4 56·17	23 4 15·9	65·85
12	5 15 34·49	25 36 35·7	0·57	12	7 7 16·25	22 57 40·8	67·22
13	5 17 52·31	25 36 32·3	1·92	13	7 9 36·29	22 50 57·5	68·59
14	5 20 10·27	25 36 20·7	3·28	14	7 11 56·30	22 44 5·9	69·96
15	5 22 28·36	25 36 1·1	4·63	15	7 14 16·26	22 37 6·2	71·32
16	5 24 46·58	25 35 33·3	6·00	16	7 16 36·18	22 29 58·3	72·68
17	5 27 4·92	25 34 57·3	7·36	17	7 18 56·05	22 22 42·2	74·03
18	5 29 23·39	25 34 13·1	8·73	18	7 21 15·88	22 15 18·0	75·38
19	5 31 41·97	25 33 20·8	10·09	19	7 23 35·66	22 7 45·7	76·72
20	5 34 0·66	25 32 20·2	11·47	20	7 25 55·38	22 0 5·4	78·06
21	5 36 19·46	25 31 11·4	12·85	21	7 28 15·05	21 52 17·0	79·40
22	5 38 38·36	25 29 54·3	14·23	22	7 30 34·66	21 44 20·6	80·74
23	5 40 57·37	25 28 28·9	15·61	23	7 32 54·21	21 36 16·1	82·07
24	5 43 16·47	N.25 26 55·3		24	7 35 13·70	N.21 28 3·7	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 21.				*SATURDAY* 23.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	7 35 13·70	N.21 28 3·7	83·39	0	9 25 19·00	N.12 31 46·7	137·71
1	7 37 33·13	21 19 43·4	84·71	1	9 27 34·78	12 18 0·4	138·59
2	7 39 52·49	21 11 15·1	86·02	2	9 29 50·50	12 4 8·9	139·46
3	7 42 11·79	21 2 39·0	87·32	3	9 32 6·17	11 50 12·1	140·31
4	7 44 31·02	20 53 55·1	88·62	4	9 34 21·78	11 36 10·2	141·15
5	7 46 50·18	20 45 3·3	89·92	5	9 36 37·35	11 22 3·3	141·98
6	7 49 9·27	20 36 3·8	91·20	6	9 38 52·87	11 7 51·4	142·79
7	7 51 28·28	20 26 56·6	92·48	7	9 41 8·34	10 53 34·6	143·59
8	7 53 47·22	20 17 41·7	93·76	8	9 43 23·77	10 39 13·1	144·38
9	7 56 6·09	20 8 19·1	95·03	9	9 45 39·16	10 24 46·9	145·15
10	7 58 24·88	19 58 48·9	96·29	10	9 47 54·51	10 10 16·0	145·90
11	8 0 43·59	19 49 11·2	97·54	11	9 50 9·83	9 55 40·5	146·65
12	8 3 2·22	19 39 25·9	98·79	12	9 52 25·11	9 41 0·7	147·38
13	8 5 20·77	19 29 33·2	100·03	13	9 54 40·36	9 26 16·4	148·10
14	8 7 39·25	19 19 33·0	101·26	14	9 56 55·59	9 11 27·8	148·80
15	8 9 57·64	19 9 25·4	102·49	15	9 59 10·79	8 56 35·0	149·49
16	8 12 15·95	18 59 10·4	103·71	16	10 1 25·97	8 41 38·1	150·16
17	8 14 34·17	18 48 48·2	104·92	17	10 3 41·13	8 26 37·2	150·81
18	8 16 52·32	18 38 18·7	106·12	18	10 5 56·28	8 11 32·3	151·45
19	8 19 10·38	18 27 42·0	107·31	19	10 8 11·42	7 56 23·6	152·08
20	8 21 28·35	18 16 58·1	108·50	20	10 10 26·54	7 41 11·1	152·69
21	8 23 46·24	18 6 7·1	109·68	21	10 12 41·66	7 25 54·9	153·28
22	8 26 4·05	17 55 9·0	110·85	22	10 14 56·77	7 10 35·2	153·86
23	8 28 21·78	N.17 44 3·9	112·01	23	10 17 11·88	N. 6 55 12·1	154·42
	FRIDAY 22.				*SUNDAY* 24.		
0	8 30 39·42	N.17 32 51·9	113·16	0	10 19 27·00	N. 6 39 45·5	154·97
1	8 32 56·98	17 21 32·9	114·30	1	10 21 42·12	6 24 15·7	155·50
2	8 35 14·45	17 10 7·1	115·43	2	10 23 57·25	6 8 42·6	156·02
3	8 37 31·84	16 58 34·5	116·56	3	10 26 12·39	5 53 6·5	156·52
4	8 39 49·14	16 46 55·2	117·67	4	10 28 27·54	5 37 27·4	157·00
5	8 42 6·36	16 35 9·1	118·78	5	10 30 42·72	5 21 45·4	157·47
6	8 44 23·50	16 23 16·4	119·87	6	10 32 57·91	5 6 0·6	157·91
7	8 46 40·56	16 11 17·2	120·96	7	10 35 13·13	4 50 13·1	158·34
8	8 48 57·54	15 59 11·5	122·03	8	10 37 28·38	4 34 23·0	158·76
9	8 51 14·43	15 46 59·3	123·10	9	10 39 43·66	4 18 30·5	159·16
10	8 53 31·25	15 34 40·7	124·15	10	10 41 58·98	4 2 35·6	159·53
11	8 55 47·99	15 22 15·8	125·19	11	10 44 14·34	3 46 38·4	159·90
12	8 58 4·65	15 9 44·6	126·23	12	10 46 29·74	3 30 39·0	160·24
13	9 0 21·24	14 57 7·2	127·25	13	10 48 45·19	3 14 37·5	160·57
14	9 2 37·75	14 44 23·7	128·26	14	10 51 0·69	2 58 34·1	160·88
15	9 4 54·18	14 31 34·1	129·26	15	10 53 16·24	2 42 28·8	161·18
16	9 7 10·55	14 18 38·5	130·25	16	10 55 31·85	2 26 21·8	161·45
17	9 9 26·84	14 5 37·0	131·22	17	10 57 47·52	2 10 13·1	161·70
18	9 11 43·06	13 52 29·7	132·19	18	11 0 3·25	1 54 2·9	161·94
19	9 13 59·21	13 39 16·6	133·14	19	11 2 19·05	1 37 51·2	162·16
20	9 16 15·30	13 25 57·7	134·08	20	11 4 34·92	1 21 38·2	162·36
21	9 18 31·32	13 12 33·2	135·01	21	11 6 50·87	1 5 24·1	162·54
22	9 20 47·27	12 59 3·2	135·92	22	11 9 6·89	0 49 8·8	162·71
23	9 23 3·17	12 45 27·6	136·83	23	11 11 23·00	0 32 52·6	162·85
24	9 25 19·00	N.12 31 46·7		24	11 13 39·20	N. 0 16 35·4	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 25.		
	h m s	° ′ ″	″
0	11 13 39·20	N. 0 16 35·4	162·98
1	11 15 55·49	N. 0 0 17·5	163·09
2	11 18 11·87	S. 0 16 1·0	163·18
3	11 20 28·34	0 32 20·1	163·25
4	11 22 44·92	0 48 39·6	163·30
5	11 25 1·60	1 4 59·4	163·33
6	11 27 18·39	1 21 19·4	163·34
7	11 29 35·29	1 37 39·4	163·33
8	11 31 52·31	1 53 59·4	163·31
9	11 34 9·45	2 10 19·3	163·26
10	11 36 26·71	2 26 38·8	163·19
11	11 38 44·09	2 42 58·0	163·11
12	11 41 1·61	2 59 16·6	163·00
13	11 43 19·26	3 15 34·6	162·88
14	11 45 37·05	3 31 51·9	162·73
15	11 47 54·98	3 48 8·3	162·56
16	11 50 13·06	4 4 23·6	162·38
17	11 52 31·28	4 20 37·9	162·17
18	11 54 49·65	4 36 51·0	161·95
19	11 57 8·18	4 53 2·6	161·70
20	11 59 26·87	5 9 12·8	161·43
21	12 1 45·72	5 25 21·4	161·14
22	12 4 4·73	5 41 28·3	160·84
23	12 6 23·92	S. 5 57 33·3	160·51
	TUESDAY 26.		
0	12 8 43·27	S. 6 13 36·4	160·16
1	12 11 2·80	6 29 37·4	159·79
2	12 13 22·51	6 45 36·1	159·40
3	12 15 42·39	7 1 32·5	158·99
4	12 18 2·46	7 17 26·5	158·56
5	12 20 22·72	7 33 17·8	158·11
6	12 22 43·17	7 49 6·5	157·64
7	12 25 3·81	8 4 52·3	157·15
8	12 27 24·65	8 20 35·2	156·63
9	12 29 45·68	8 36 15·0	156·10
10	12 32 6·92	8 51 51·6	155·55
11	12 34 28·35	9 7 24·9	154·98
12	12 36 49·99	9 22 54·8	154·38
13	12 39 11·84	9 38 21·1	153·76
14	12 41 33·90	9 53 43·6	153·12
15	12 43 56·18	10 9 2·4	152·47
16	12 46 18·67	10 24 17·2	151·79
17	12 48 41·37	10 39 28·0	151·10
18	12 51 4·30	10 54 34·5	150·38
19	12 53 27·45	11 9 36·8	149·64
20	12 55 50·82	11 24 34·7	148·88
21	12 58 14·41	11 39 28·0	148·10
22	13 0 38·24	11 54 16·6	147·31
23	13 3 2·29	12 9 0·4	146·49
24	13 5 26·57	S. 12 23 39·4	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 27.		
	h m s	° ′ ″	″
0	13 5 26·57	S. 12 23 39·4	145·65
1	13 7 51·08	12 38 13·3	144·79
2	13 10 15·83	12 52 42·1	143·92
3	13 12 40·81	13 7 5·6	143·02
4	13 15 6·03	13 21 23·7	142·10
5	13 17 31·48	13 35 36·3	141·17
6	13 19 57·17	13 49 43·3	140·21
7	13 22 23·10	14 3 44·6	139·24
8	13 24 49·27	14 17 40·0	138·25
9	13 27 15·68	14 31 29·5	137·23
10	13 29 42·33	14 45 12·9	136·20
11	13 32 9·22	14 58 50·1	135·15
12	13 34 36·35	15 12 20·9	134·08
13	13 37 3·72	15 25 45·4	132·99
14	13 39 31·33	15 39 3·4	131·89
15	13 41 59·18	15 52 14·7	130·76
16	13 44 27·27	16 5 19·2	129·62
17	13 46 55·60	16 18 16·9	128·46
18	13 49 24·16	16 31 7·7	127·28
19	13 51 52·96	16 43 51·4	126·09
20	13 54 22·00	16 56 27·9	124·87
21	13 56 51·28	17 8 57·2	123·64
22	13 59 20·78	17 21 19·0	122·39
23	14 1 50·52	S. 17 33 33·4	121·13
	THURSDAY 28.		
0	14 4 20·49	S. 17 45 40·2	119·85
1	14 6 50·69	17 57 39·3	118·55
2	14 9 21·12	18 9 30·6	117·24
3	14 11 51·77	18 21 14·1	115·91
4	14 14 22·65	18 32 49·5	114·57
5	14 16 53·74	18 44 16·9	113·21
6	14 19 25·06	18 55 36·2	111·83
7	14 21 56·59	19 6 47·2	110·44
8	14 24 28·34	19 17 49·8	109·03
9	14 27 0·29	19 28 44·0	107·61
10	14 29 32·46	19 39 29·7	106·18
11	14 32 4·83	19 50 6·8	104·73
12	14 34 37·40	20 0 35·2	103·28
13	14 37 10·18	20 10 54·9	101·80
14	14 39 43·15	20 21 5·7	100·32
15	14 42 16·30	20 31 7·6	98·82
16	14 44 49·65	20 41 0·6	97·31
17	14 47 23·18	20 50 44·4	95·78
18	14 49 56·89	21 0 19·1	94·25
19	14 52 30·77	21 9 44·6	92·70
20	14 55 4·82	21 19 0·8	91·14
21	14 57 39·04	21 28 7·6	89·56
22	15 0 13·42	21 37 5·0	87·98
23	15 2 47·95	21 45 52·9	86·39
24	15 5 22·63	S. 21 54 31·3	

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MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 29.		
	h m s	° ′ ″	″
0	15 5 22·63	S. 21 54 31·3	84·79
1	15 7 57·46	22 3 0·1	83·18
2	15 10 32·43	22 11 19·1	81·56
3	15 13 7·53	22 19 28·5	79·93
4	15 15 42·76	22 27 28·1	78·29
5	15 18 18·12	22 35 17·9	76·64
6	15 20 53·59	22 42 57·8	74·99
7	15 23 29·17	22 50 27·7	73·33
8	15 26 4·86	22 57 47·7	71·66
9	15 28 40·64	23 4 57·6	69·98
10	15 31 16·52	23 11 57·5	68·29
11	15 33 52·48	23 18 47·2	66·60
12	15 36 28·53	23 25 26·8	64·90
13	15 39 4·65	23 31 56·2	63·20
14	15 41 40·84	23 38 15·4	61·49
15	15 44 17·08	23 44 24·4	59·78
16	15 46 53·38	23 50 23·0	58·06
17	15 49 29·72	23 56 11·4	56·34
18	15 52 6·10	24 1 49·4	54·61
19	15 54 42·51	24 7 17·1	52·88
20	15 57 18·94	24 12 34·4	51·15
21	15 59 55·39	24 17 41·3	49·42
22	16 2 31·85	24 22 37·8	47·68
23	16 5 8·32	S. 24 27 23·8	45·94
	SATURDAY 30.		
0	16 7 44·77	S. 24 31 59·4	44·20
1	16 10 21·21	24 36 24·6	42·45
2	16 12 57·64	24 40 39·3	40·71
3	16 15 34·03	24 44 43·6	38·97
4	16 18 10·39	24 48 37·4	37·22
5	16 20 46·70	24 52 20·7	35·48
6	16 23 22·97	24 55 53·6	33·73
7	16 25 59·17	24 59 16·0	31·99
8	16 28 35·30	25 2 27·9	30·25
9	16 31 11·37	25 5 29·4	28·51
10	16 33 47·35	25 8 20·5	26·77
11	16 36 23·24	25 11 1·1	25·03
12	16 38 59·03	25 13 31·2	23·29
13	16 41 34·72	25 15 51·0	21·56
14	16 44 10·29	25 18 0·3	19·83
15	16 46 45·74	25 19 59·3	18·10
16	16 49 21·06	25 21 47·9	16·38
17	16 51 56·24	25 23 26·2	14·67
18	16 54 31·29	25 24 54·2	12·95
19	16 57 6·18	25 26 11·9	11·25
20	16 59 40·91	25 27 19·4	9·54
21	17 2 15·48	25 28 16·7	7·85
22	17 4 49·87	25 29 3·8	6·15
23	17 7 24·09	25 29 40·7	4·47
24	17 9 58·12	S. 25 30 7·5	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SUNDAY 31.		
	h m s	° ′ ″	″
0	17 9 58·12	S. 25 30 7·5	2·79
1	17 12 31·95	25 30 24·2	1·11
2	17 15 5·59	25 30 30·9	0·55
3	17 17 39·01	25 30 27·6	2·21
4	17 20 12·22	25 30 14·3	3·87
5	17 22 45·21	25 29 51·1	5·51
6	17 25 17·96	25 29 18·0	7·15
7	17 27 50·49	25 28 35·1	8·78
8	17 30 22·77	25 27 42·4	10·40
9	17 32 54·80	25 26 40·0	12·02
10	17 35 26·58	25 25 27·9	13·62
11	17 37 58·09	25 24 6·2	15·22
12	17 40 29·35	25 22 34·8	16·81
13	17 43 0·33	25 20 53·9	18·39
14	17 45 31·03	25 19 3·6	19·96
15	17 48 1·45	25 17 3·8	21·52
16	17 50 31·58	25 14 54·7	23·07
17	17 53 1·41	25 12 36·3	24·61
18	17 55 30·94	25 10 8·7	26·13
19	17 58 0·17	25 7 31·9	27·65
20	18 0 29·09	25 4 46·0	29·16
21	18 2 57·70	25 1 51·0	30·66
22	18 5 25·98	24 58 47·1	32·14
23	18 7 53·94	S. 24 55 34·2	33·61
	MONDAY, APRIL 1.		
0	18 10 21·57	S. 24 52 12·6	

PHASES OF THE MOON.

		d	h	m
☾	*Last Quarter* -	3	7	15·9
●	New Moon - -	11	1	37·5
☽	*First Quarter* -	19	5	31·6
○	Full Moon - -	26	2	14·9

		d	h
☾	Apogee - - - - - -	13	12
☾	Perigee - - - - - -	26	12

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		Noon.			P.L. of diff.	III^h.			P.L. of diff.	VI^h.			P.L. of diff.	IX^h.			P.L. of diff.
			°	′	″		°	′	″		°	′	″		°	′	″	
1	Jupiter	W.	81	20	11	2184	83	9	3	2196	84	57	36	2210	86	45	48	2223
	Regulus	W.	73	4	17	2219	74	52	16	2232	76	39	56	2245	78	27	17	2258
	Saturn	W.	65	24	29	2210	67	12	41	2222	69	0	36	2235	70	48	11	2248
	α Aquilæ	E.	82	47	40	2782	81	12	48	2800	79	38	20	2821	78	4	19	2841
	Sun	E.	119	56	9	2535	118	15	45	2549	116	35	40	2563	114	55	54	2577
2	Jupiter	W.	95	41	49	2293	97	27	59	2307	99	13	49	2321	100	59	18	2336
	Regulus	W.	87	19	1	2328	89	4	20	2342	90	49	19	2356	92	33	57	2370
	Saturn	W.	79	41	16	2315	81	26	53	2329	83	12	10	2343	84	57	7	2358
	Spica	W.	33	17	30	2340	35	2	32	2352	36	47	16	2364	38	31	42	2378
	α Aquilæ	E.	70	21	32	2968	68	50	39	2998	67	20	23	3029	65	50	46	3063
	Sun	E.	106	42	3	2651	105	4	17	2666	103	26	52	2682	101	49	48	2697
3	Jupiter	W.	109	41	28	2407	111	24	52	2422	113	7	55	2436	114	50	38	2451
	Saturn	W.	93	36	41	2429	95	19	35	2443	97	2	9	2458	98	44	22	2472
	Spica	W.	47	9	3	2445	48	51	33	2459	50	33	44	2472	52	15	36	2486
	α Aquilæ	E.	58	33	38	3259	57	8	39	3306	55	44	35	3357	54	21	29	3410
	Sun	E.	93	49	33	2775	92	14	32	2789	90	39	50	2805	89	5	29	2820
4	Saturn	W.	107	10	32	2541	108	50	48	2556	110	30	44	2569	112	10	22	2583
	Spica	W.	60	40	11	2553	62	20	11	2566	63	59	52	2579	65	39	16	2593
	Antares	W.	14	55	14	2554	16	35	12	2566	18	14	54	2578	19	54	19	2590
	Sun	E.	81	18	36	2895	79	46	11	2909	78	14	4	2924	76	42	16	2938
5	Spica	W.	73	51	54	2654	75	29	35	2666	77	7	1	2678	78	44	11	2689
	Antares	W.	28	7	18	2650	29	45	5	2662	31	22	36	2673	32	59	52	2685
	Sun	E.	69	7	43	3008	67	37	40	3021	66	7	53	3034	64	38	23	3047
6	Spica	W.	86	46	15	2744	88	21	57	2754	89	57	25	2764	91	32	40	2775
	Antares	W.	41	2	26	2739	42	38	14	2750	44	13	48	2760	45	49	9	2769
	Sun	E.	57	14	46	3109	55	46	47	3121	54	19	3	3133	52	51	34	3144
7	Spica	W.	99	25	42	2821	100	59	42	2830	102	33	31	2839	104	7	8	2848
	Antares	W.	53	42	45	2816	55	16	52	2825	56	50	48	2834	58	24	32	2842
	Sun	E.	45	37	33	3200	44	11	24	3212	42	45	29	3223	41	19	47	3234
8	Antares	W.	66	10	35	2881	67	43	18	2889	69	15	51	2897	70	48	14	2904
	Sun	E.	34	14	29	3289	32	50	5	3300	31	25	53	3312	30	1	56	3325
13	Sun	W.	21	40	32	3545	23	0	6	3539	24	19	47	3533	25	39	35	3527
	Mars	E.	32	18	38	3362	30	55	38	3366	29	32	43	3371	28	9	53	3376
	Aldebaran	E.	54	44	55	3153	53	17	50	3159	51	50	52	3163	50	23	59	3168
	Pollux	E.	96	36	12	3104	95	8	7	3105	93	40	3	3106	92	12	1	3107
14	Sun	W.	32	19	54	3507	33	40	10	3504	35	0	30	3501	36	20	53	3498
	Aldebaran	E.	43	11	8	3196	41	44	54	3203	40	18	49	3210	38	52	52	3218
	Pollux	E.	84	52	7	3110	83	24	10	3110	81	56	12	3110	80	28	15	3109
	Jupiter	E.	112	13	51	3056	110	44	48	3057	109	15	46	3056	107	46	43	3055
15	Sun	W.	43	3	45	3480	44	24	32	3475	45	45	24	3471	47	6	20	3466
	Aldebaran	E.	31	45	47	3272	30	21	3	3289	28	56	39	3308	27	32	36	3330
	Pollux	E.	73	8	11	3102	71	40	4	3101	70	11	56	3098	68	43	44	3096
	Jupiter	E.	100	21	4	3047	98	51	49	3044	97	22	31	3042	95	53	10	3038
	Saturn	E.	116	37	6	3068	115	8	17	3064	113	39	23	3061	112	10	26	3057
16	Sun	W.	53	52	27	3438	55	14	1	3432	56	35	41	3425	57	57	29	3417

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Jupiter	W.	88 33 41	2837	90 21 14	2251	92 8 26	2264	93 55 18	2278
	Regulus	W.	80 14 18	2272	82 0 59	2285	83 47 20	2300	85 33 20	2313
	Saturn	W.	72 35 27	2261	74 22 24	2274	76 9 1	2287	77 55 19	2302
	α Aquilæ	E.	76 30 44	2863	74 57 38	2888	73 25 4	2913	71 53 1	2939
	Sun	E.	113 16 28	2592	111 37 22	2606	109 58 35	2621	108 20 9	2636
2	Jupiter	W.	102 44 25	2350	104 29 12	2364	106 13 38	2379	107 57 43	2393
	Regulus	W.	94 18 15	2385	96 2 11	2399	97 45 48	2414	99 29 3	2428
	Saturn	W.	86 41 42	2371	88 25 58	2386	90 9 53	2401	91 53 27	2415
	Spica	W.	40 15 48	2391	41 59 36	2405	43 43 4	2418	45 26 13	2431
	α Aquilæ	E.	64 21 51	3097	62 53 38	3134	61 26 10	3173	59 59 29	3215
	Sun	E.	100 13 4	2712	98 36 40	2728	97 0 38	2743	95 24 55	2759
3	Jupiter	W.	116 33 0	2465	118 15 2	2479	119 56 45	2493	121 38 8	2507
	Saturn	W.	100 26 15	2485	102 7 49	2499	103 49 3	2514	105 29 57	2527
	Spica	W.	53 57 9	2499	55 38 23	2513	57 19 18	2527	58 59 54	2540
	α Aquilæ	E.	52 59 23	3467	51 38 22	3527	50 18 28	3592	48 59 45	3663
	Sun	E.	87 31 27	2835	85 57 45	2851	84 24 23	2866	82 51 20	2880
4	Saturn	W.	113 49 41	2596	115 28 42	2609	117 7 25	2622	118 45 50	2635
	Spica	W.	67 18 21	2605	68 57 10	2618	70 35 41	2629	72 13 56	2642
	Antares	W.	21 33 28	2602	23 12 20	2614	24 50 56	2626	26 29 15	2638
	Sun	E.	75 10 46	2953	73 39 34	2967	72 8 40	2981	70 38 3	2994
5	Spica	W.	80 21 5	2700	81 57 45	2712	83 34 9	2723	85 10 19	2733
	Antares	W.	34 36 52	2696	36 13 37	2707	37 50 8	2718	39 26 24	2728
	Sun	E.	63 9 8	3060	61 40 10	3072	60 11 26	3085	58 42 58	3098
6	Spica	W.	93 7 41	2784	94 42 30	2793	96 17 7	2803	97 51 31	2813
	Antares	W.	47 24 17	2779	48 59 13	2789	50 33 56	2798	52 8 27	2808
	Sun	E.	51 24 18	3157	49 57 17	3168	48 30 29	3178	47 3 54	3190
7	Spica	W.	105 40 34	2856	107 13 50	2864	108 46 55	2873	110 19 49	2880
	Antares	W.	59 58 6	2851	61 31 28	2858	63 4 41	2866	64 37 43	2874
	Sun	E.	39 54 18	3244	38 29 1	3256	37 3 58	3266	35 39 7	3277
8	Antares	W.	72 20 28	2910	73 52 34	2917	75 24 31	2924	76 56 19	2931
	Sun	E.	28 38 13	3337	27 14 44	3350	25 51 30	3365	24 28 33	3380
13	Sun	W.	26 59 30	3523	28 19 29	3518	29 39 33	3514	30 59 42	3511
	Mars	E.	26 47 9	3381	25 24 31	3387	24 2 0	3394	22 39 37	3401
	Aldebaran	E.	48 57 12	3173	47 30 31	3179	46 3 57	3184	44 37 29	3190
	Pollux	E.	90 44 0	3109	89 16 1	3109	87 48 2	3109	86 20 4	3110
14	Sun	W.	37 41 20	3495	39 1 50	3490	40 22 25	3487	41 43 3	3484
	Aldebaran	E.	37 27 4	3226	36 1 26	3236	34 36 0	3247	33 10 46	3259
	Pollux	E.	79 0 17	3108	77 32 17	3108	76 4 17	3106	74 36 15	3105
	Jupiter	E.	106 17 38	3055	104 48 33	3053	103 19 25	3051	101 50 16	3049
15	Sun	W.	48 27 22	3462	49 48 29	3456	51 9 42	3451	52 31 1	3445
	Aldebaran	E.	26 8 59	3357	24 45 53	3388	23 23 22	3425	22 1 34	3472
	Pollux	E.	67 15 29	3093	65 47 11	3090	64 18 49	3086	62 50 22	3083
	Jupiter	E.	94 23 44	3035	92 54 15	3031	91 24 40	3026	89 55 0	3022
	Saturn	E.	110 41 24	3053	109 12 17	3049	107 43 5	3043	106 13 46	3039
16	Sun	W.	59 19 26	3409	60 41 32	3401	62 3 47	3393	63 26 11	3384

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
16	Pollux	E.	61 21 51	3079	59 53 16	3074	58 24 35	3069	56 55 48	3064
	Jupiter	E.	88 25 14	3017	86 55 22	3012	85 25 24	3006	83 55 18	3000
	Regulus	E.	98 11 13	3047	96 41 59	3041	95 12 37	3036	93 43 9	3029
	Saturn	E.	104 44 22	3034	103 14 51	3028	101 45 13	3022	100 15 27	3015
17	Sun	W.	64 48 46	3375	66 11 31	3365	67 34 27	3355	68 57 35	3344
	α Arietis	W.	26 27 57	3067	27 56 47	3051	29 25 57	3035	30 55 26	3019
	Pollux	E.	49 30 21	3038	48 0 55	3032	46 31 22	3025	45 1 40	3020
	Jupiter	E.	76 22 48	2964	74 51 50	2955	73 20 41	2946	71 49 21	2938
	Regulus	E.	86 13 40	2993	84 43 18	2983	83 12 44	2975	81 42 0	2965
	Saturn	E.	92 44 31	2978	91 13 51	2970	89 43 1	2961	88 11 59	2951
18	Sun	W.	75 56 28	3286	77 20 56	3272	78 45 40	3259	80 10 40	3245
	α Arietis	W.	38 27 32	2946	39 58 52	2932	41 30 30	2917	43 2 27	2902
	Mars	W.	24 26 17	3198	25 52 29	3180	27 19 2	3163	28 45 55	3145
	Pollux	E.	37 31 20	2989	36 0 54	2984	34 30 21	2979	32 59 42	2975
	Jupiter	E.	64 9 40	2887	62 37 4	2875	61 4 13	2863	59 31 7	2851
	Regulus	E.	74 5 11	2912	72 33 8	2901	71 0 50	2889	69 28 17	2876
	Saturn	E.	80 33 43	2899	79 1 23	2887	77 28 48	2876	75 55 58	2863
19	Sun	W.	87 19 54	3169	88 46 40	3153	90 13 45	3137	91 41 10	3120
	α Arietis	W.	50 47 1	2825	52 20 56	2809	53 55 12	2793	55 29 49	2776
	Mars	W.	36 5 34	3060	37 34 33	3043	39 3 53	3025	40 33 35	3007
	Aldebaran	W.	19 49 53	3263	21 14 48	3187	22 41 13	3121	24 8 57	3064
	Jupiter	E.	51 41 32	2785	50 6 45	2771	48 31 39	2756	46 56 14	2742
	Regulus	E.	61 41 20	2808	60 7 3	2794	58 32 27	2779	56 57 32	2764
	Saturn	E.	68 7 42	2797	66 33 10	2782	64 58 19	2768	63 23 9	2753
20	Sun	W.	99 3 31	3031	100 33 6	3012	102 3 4	2993	103 33 25	2974
	α Arietis	W.	63 28 29	2690	65 5 22	2672	66 42 40	2654	68 20 22	2636
	Mars	W.	48 7 45	2914	49 39 46	2895	51 12 11	2876	52 45 0	2856
	Aldebaran	W.	31 42 53	2855	33 16 9	2822	34 50 8	2791	36 24 47	2761
	Jupiter	E.	38 54 13	2666	37 16 47	2650	35 39 0	2635	34 0 52	2620
	Regulus	E.	48 57 47	2684	47 20 46	2667	45 43 22	2651	44 5 36	2634
	Saturn	E.	55 22 20	2676	53 45 8	2660	52 7 34	2644	50 29 39	2628
21	Sun	W.	111 11 17	2876	112 44 7	2856	114 17 22	2836	115 51 3	2816
	α Arietis	W.	76 35 9	2541	78 15 25	2523	79 56 6	2503	81 37 15	2484
	Mars	W.	60 35 30	2757	62 10 55	2737	63 46 46	2716	65 23 4	2696
	Aldebaran	W.	44 27 24	2629	46 5 40	2603	47 44 31	2579	49 23 54	2556
	Regulus	E.	35 51 0	2550	34 10 56	2533	32 30 28	2517	30 49 38	2501
	Saturn	E.	42 14 31	2547	40 34 23	2532	38 53 54	2517	37 13 4	2502
	Spica	E.	89 50 36	2530	88 10 4	2511	86 29 6	2492	84 47 41	2473
22	Sun	W.	123 46 0	2717	125 22 18	2698	126 59 1	2678	128 36 10	2660
	Mars	W.	73 31 25	2595	75 10 27	2574	76 49 57	2554	78 29 55	2535
	Aldebaran	W.	57 48 51	2443	59 31 25	2422	61 14 28	2401	62 58 2	2380
	Saturn	E.	28 44 7	2442	27 1 32	2436	25 18 48	2431	23 35 57	2430
	Spica	E.	76 13 56	2378	74 29 49	2359	72 45 16	2340	71 0 15	2322
23	Mars	W.	86 56 29	2440	88 39 7	2421	90 22 11	2403	92 5 41	2387
	Aldebaran	W.	71 43 9	2283	73 29 34	2264	75 16 27	2246	77 3 46	2229
	Pollux	W.	29 48 47	2344	31 33 42	2316	33 19 18	2289	35 5 34	2264

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
16	Pollux	E.	55 26 55	3060	53 57 57	3055	52 28 52	3049	50 59 40	3043
	Jupiter	E.	82 25 5	2993	80 54 44	2986	79 24 14	2980	77 53 36	2972
	Regulus	E.	92 13 32	3023	90 43 48	3016	89 13 55	3008	87 43 52	3001
	Saturn	E.	98 45 33	3009	97 15 32	3002	95 45 21	2994	94 15 1	2986
17	Sun	W.	70 20 55	3333	71 44 28	3322	73 8 14	3310	74 32 14	3298
	α Arietis	W.	32 25 15	3005	33 55 22	2990	35 25 47	2976	36 56 30	2961
	Pollux	E.	43 31 52	3013	42 1 55	3007	40 31 51	3001	39 1 39	2995
	Jupiter	E.	70 17 50	2928	68 46 7	2918	67 14 11	2908	65 42 3	2897
	Regulus	E.	80 11 4	2955	78 39 55	2946	77 8 34	2935	75 36 59	2924
	Saturn	E.	86 40 45	2942	85 9 19	2931	83 37 40	2921	82 5 48	2911
18	Sun	W.	81 35 56	3231	83 1 29	3216	84 27 19	3201	85 53 27	3185
	α Arietis	W.	44 34 43	2887	46 7 18	2872	47 40 12	2856	49 13 27	2841
	Mars	W.	30 13 10	3128	31 40 45	3112	33 8 40	3094	34 36 57	3078
	Pollux	E.	31 28 58	2972	29 58 10	2971	28 27 21	2971	26 56 31	2973
	Jupiter	E.	57 57 45	2838	56 24 7	2826	54 50 13	2812	53 16 1	2799
	Regulus	E.	67 55 28	2863	66 22 22	2850	64 48 59	2837	63 15 19	2822
	Saturn	E.	74 22 52	2851	72 49 30	2838	71 15 52	2824	69 41 56	2811
19	Sun	W.	93 8 55	3103	94 37 1	3085	96 5 29	3067	97 34 19	3049
	α Arietis	W.	57 4 48	2759	58 40 9	2742	60 15 53	2725	61 51 59	2708
	Mars	W.	42 3 39	2989	43 34 6	2970	45 4 56	2952	46 36 9	2934
	Aldebaran	W.	25 37 50	3014	27 7 46	2969	28 38 38	2928	30 10 21	2890
	Jupiter	E.	45 20 30	2727	43 44 26	2712	42 8 2	2697	40 31 18	2681
	Regulus	E.	55 22 17	2748	53 46 41	2732	52 10 44	2717	50 34 26	2701
	Saturn	E.	61 47 40	2738	60 11 51	2723	58 35 42	2707	56 59 12	2691
20	Sun	W.	105 4 10	2954	106 35 20	2935	108 6 54	2916	109 38 53	2896
	α Arietis	W.	69 58 28	2617	71 37 0	2599	73 15 57	2580	74 55 20	2561
	Mars	W.	54 18 15	2837	55 51 55	2817	57 26 1	2798	59 0 32	2777
	Aldebaran	W.	38 0 6	2734	39 36 1	2706	41 12 33	2679	42 49 41	2653
	Jupiter	E.	32 22 24	2604	30 43 34	2589	29 4 24	2574	27 24 53	2560
	Regulus	E.	42 27 27	2617	40 48 55	2600	39 10 0	2583	37 30 42	2566
	Saturn	E.	48 51 22	2611	47 12 42	2596	45 33 41	2579	43 54 17	2563
21	Sun	W.	117 25 10	2795	118 59 44	2776	120 34 43	2756	122 10 9	2737
	α Arietis	W.	83 18 50	2465	85 0 52	2446	86 43 22	2427	88 26 18	2407
	Mars	W.	66 59 49	2675	68 37 2	2655	70 14 42	2635	71 52 49	2614
	Aldebaran	W.	51 3 50	2533	52 44 18	2510	54 25 18	2487	56 6 49	2465
	Regulus	E.	29 8 26	2485	27 26 52	2471	25 44 58	2458	24 2 45	2446
	Saturn	E.	35 31 54	2488	33 50 23	2475	32 8 35	2462	30 26 29	2451
	Spica	E.	83 5 50	2454	81 23 32	2435	79 40 47	2416	77 57 35	2397
22	Sun	W.	130 13 44	2641	131 51 44	2622	133 30 9	2605	135 8 57	2588
	Mars	W.	80 10 20	2515	81 51 12	2496	83 32 31	2477	85 14 17	2458
	Aldebaran	W.	64 42 6	2360	66 26 39	2340	68 11 40	2320	69 57 11	2301
	Saturn	E.	21 53 5	2434	20 10 18	2445	18 27 47	2465	16 45 45	2499
	Spica	E.	69 14 48	2304	67 28 54	2285	65 42 33	2268	63 55 46	2250
23	Mars	W.	93 49 35	2369	95 33 54	2353	97 18 36	2337	99 3 41	2322
	Aldebaran	W.	78 51 31	2212	80 39 40	2196	82 28 14	2180	84 17 12	2165
	Pollux	W.	36 52 26	2240	38 39 54	2219	40 27 53	2198	42 16 24	2179

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
23	Spica	E.	62 8 33	2233	60 20 54	2216	58 32 50	2200	56 44 22	2183
	Antares	E.	107 49 34	2226	106 1 46	2208	104 13 31	2192	102 24 52	2176
24	Mars	W.	100 49 9	2307	102 34 58	2293	104 21 8	2279	106 7 38	2266
	Aldebaran	W.	86 6 32	2151	87 56 14	2137	89 46 16	2124	91 36 39	2112
	Pollux	W.	44 5 24	2161	45 54 51	2143	47 44 45	2127	49 35 3	2111
	Spica	E.	47 36 9	2110	45 45 25	2097	43 54 21	2085	42 2 59	2074
	Antares	E.	93 15 34	2100	91 24 34	2086	89 33 14	2073	87 41 33	2061
25	Pollux	W.	58 52 1	2048	60 44 20	2039	62 36 54	2029	64 29 43	2022
	Jupiter	W.	32 8 37	2017	34 1 44	2007	35 55 7	1997	37 48 46	1989
	Regulus	W.	21 50 37	2064	23 42 32	2048	25 34 52	2034	27 27 33	2022
	Spica	E.	32 42 5	2028	30 49 15	2023	28 56 16	2018	27 3 9	2015
	Antares	E.	78 18 41	2008	76 25 19	2000	74 31 45	1992	72 37 58	1986
26	Pollux	W.	73 56 26	1994	75 50 9	1991	77 43 57	1990	79 37 47	1989
	Jupiter	W.	47 19 52	1960	49 14 29	1958	51 9 10	1955	53 3 55	1954
	Regulus	W.	36 54 54	1984	38 48 54	1980	40 43 0	1977	42 37 11	1975
	Saturn	W.	31 15 25	2014	33 8 38	2005	35 2 5	1998	36 55 43	1993
	Antares	E.	63 6 47	1963	61 12 14	1961	59 17 38	1959	57 22 59	1958
	α Aquilæ	E.	114 24 17	2637	112 46 12	2617	111 7 40	2598	109 28 42	2582
27	Pollux	W.	89 6 52	1998	91 0 30	2002	92 54 1	2007	94 47 25	2013
	Jupiter	W.	62 37 34	1962	64 32 8	1966	66 26 36	1972	68 20 55	1977
	Regulus	W.	52 8 17	1980	54 2 22	1984	55 56 22	1988	57 50 15	1993
	Saturn	W.	46 25 13	1986	48 19 9	1989	50 13 1	1992	52 6 49	1996
	Antares	E.	47 50 1	1969	45 55 37	1973	44 1 20	1979	42 7 12	1984
	α Aquilæ	E.	101 9 38	2540	99 29 20	2538	97 48 59	2538	96 8 38	2539
28	Jupiter	W.	77 49 57	2016	79 43 6	2026	81 35 59	2037	83 28 36	2048
	Regulus	W.	67 17 10	2032	69 9 55	2042	71 2 24	2052	72 54 37	2063
	Saturn	W.	61 33 41	2030	63 26 28	2039	65 19 2	2049	67 11 19	2059
	Antares	E.	32 39 13	2026	30 46 19	2036	28 53 41	2047	27 1 20	2059
	α Aquilæ	E.	87 48 17	2575	86 8 47	2588	84 29 35	2602	82 50 42	2617
29	Jupiter	W.	92 46 59	2113	94 37 39	2128	96 27 56	2142	98 17 51	2158
	Regulus	W.	82 11 10	2126	84 1 29	2141	85 51 25	2156	87 40 59	2171
	Saturn	W.	76 28 24	2122	78 18 50	2136	80 8 54	2151	81 58 36	2165
	Spica	W.	28 10 4	2143	29 59 58	2155	31 49 34	2168	33 38 50	2181
	α Aquilæ	E.	74 42 23	2722	73 6 12	2748	71 30 35	2776	69 55 36	2806
	Sun	E.	138 34 0	2455	136 51 44	2469	135 9 47	2483	133 28 10	2497
30	Jupiter	W.	107 21 27	2239	109 8 56	2256	110 56 0	2274	112 42 38	2291
	Saturn	W.	91 1 18	2245	92 48 38	2263	94 35 32	2280	96 22 1	2298
	Spica	W.	42 39 57	2256	44 27 2	2272	46 13 43	2288	48 0 0	2304
	α Aquilæ	E.	62 11 14	2987	60 40 45	3031	59 11 11	3078	57 42 34	3127
	Fomalhaut	E.	86 12 52	2656	84 35 13	2675	82 58 0	2696	81 21 14	2717
	Sun	E.	125 5 22	2578	123 25 57	2595	121 46 55	2613	120 8 18	2630
31	Saturn	W.	105 7 59	2387	106 51 53	2405	108 35 20	2423	110 18 22	2441
	Spica	W.	56 45 14	2391	58 29 1	2408	60 12 24	2426	61 55 22	2443
	α Aquilæ	E.	50 35 37	3429	49 13 53	3503	47 53 32	3584	46 34 40	3670
	Fomalhaut	E.	73 24 52	2837	71 51 12	2865	70 18 8	2892	68 45 39	2921
	Sun	E.	112 1 18	2723	110 25 9	2742	108 49 25	2760	107 14 5	2779

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month	Star's Name and Position.		*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
23	Spica	E.	54 55 29	2168	53 6 13	2153	51 16 34	2138	49 26 32	2124
	Antares	E.	100 35 48	2159	98 46 19	2144	96 56 27	2128	95 6 11	2114
24	Mars	W.	107 54 27	2254	109 41 35	2243	111 28 59	2231	113 16 40	2221
	Aldebaran	W.	93 27 20	2100	95 18 20	2089	97 9 36	2079	99 1 8	2070
	Pollux	W.	51 25 45	2097	53 16 49	2083	55 8 14	2070	56 59 59	2059
	Spica	E.	40 11 19	2063	38 19 22	2052	36 27 9	2044	34 34 43	2036
	Antares	E.	85 49 33	2049	83 57 15	2038	82 4 40	2027	80 11 48	2017
25	Pollux	W.	66 22 43	2014	68 15 56	2008	70 9 18	2003	72 2 48	1998
	Jupiter	W.	39 42 38	1981	41 36 43	1975	43 30 57	1969	45 25 21	1964
	Regulus	W.	29 20 34	2012	31 13 50	2002	33 7 21	1995	35 1 3	1989
	Spica	E.	25 9 58	2013	23 16 44	2003	21 23 31	2016	19 30 22	2023
	Antares	E.	70 44 1	1979	68 49 54	1974	66 55 39	1969	65 1 16	1965
26	Pollux	W.	81 31 39	1989	83 25 31	1990	85 19 21	1991	87 13 9	1994
	Jupiter	W.	54 58 41	1954	56 53 27	1955	58 48 13	1957	60 42 55	1959
	Regulus	W.	44 31 24	1974	46 25 39	1974	48 19 54	1975	50 14 7	1977
	Saturn	W.	38 49 29	1989	40 43 21	1986	42 37 17	1985	44 31 15	1985
	Antares	E.	55 28 19	1960	53 33 41	1960	51 39 4	1962	49 44 30	1965
	α Aquilæ	E.	107 49 23	2569	106 9 46	2558	104 29 54	2550	102 49 50	2544
27	Pollux	W.	96 40 39	2020	98 33 42	2028	100 26 33	2035	102 19 12	2045
	Jupiter	W.	70 15 6	1983	72 9 7	1990	74 2 57	1998	75 56 34	2007
	Regulus	W.	59 44 0	2000	61 37 35	2007	63 30 59	2014	65 24 11	2023
	Saturn	W.	54 0 30	2001	55 54 3	2007	57 47 27	2014	59 40 40	2021
	Antares	E.	40 13 12	1991	38 19 24	1998	36 25 47	2007	34 32 23	2016
	α Aquilæ	E.	94 28 19	2543	92 48 5	2548	91 7 58	2555	89 28 1	2564
28	Jupiter	W.	85 20 55	2060	87 12 55	2072	89 4 37	2085	90 55 59	2099
	Regulus	W.	74 46 34	2075	76 38 12	2087	78 29 31	2100	80 20 31	2113
	Saturn	W.	69 3 21	2071	70 55 5	2083	72 46 31	2096	74 37 37	2108
	Antares	E.	25 9 17	2072	23 17 34	2085	21 26 12	2099	19 35 11	2114
	α Aquilæ	E.	81 12 10	2635	79 34 2	2654	77 56 20	2675	76 19 6	2698
29	Jupiter	W.	100 7 22	2173	101 56 30	2189	103 45 14	2206	105 33 33	2223
	Regulus	W.	89 30 10	2186	91 18 58	2202	93 7 22	2218	94 55 22	2235
	Saturn	W.	83 47 56	2180	85 36 53	2196	87 25 26	2213	89 13 34	2229
	Spica	W.	35 27 47	2194	37 16 23	2209	39 4 37	2224	40 52 29	2240
	α Aquilæ	E.	68 21 16	2838	66 47 37	2872	65 14 42	2908	63 42 33	2947
	Sun	E.	131 46 52	2513	130 5 57	2528	128 25 23	2544	126 45 11	2561
30	Jupiter	W.	114 28 50	2309	116 14 36	2328	117 59 55	2345	119 44 49	2364
	Saturn	W.	98 8 4	2315	99 53 42	2333	101 38 54	2351	103 23 39	2369
	Spica	W.	49 45 53	2322	51 31 20	2339	53 16 23	2356	55 1 1	2373
	α Aquilæ	E.	56 14 57	3179	54 48 23	3236	53 22 56	3296	51 58 39	3360
	Fomalhaut	E.	79 44 56	2739	78 9 8	2763	76 33 51	2786	74 59 5	2811
	Sun	E.	118 30 4	2649	116 52 16	2667	115 14 52	2686	113 37 53	2704
31	Saturn	W.	112 0 58	2460	113 43 8	2478	115 24 52	2496	117 6 11	2514
	Spica	W.	63 37 55	2461	65 20 3	2479	67 1 46	2496	68 43 5	2513
	α Aquilæ	E.	45 17 21	3764	44 1 41	3865	42 47 46	3976	41 35 43	4099
	Fomalhaut	E.	67 13 47	2951	65 42 32	2983	64 11 58	3015	62 42 3	3049
	Sun	E.	105 39 10	2798	104 4 40	2817	102 30 34	2836	100 56 53	2855

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Day of the Month.	Airy's Day Numbers—For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of E	F	G	H	Value of L
1	0·85854	1·49843	0·23041	1·32841	95·468
2	0·85238	1·49372	0·23095	1·32834	95·949
3	0·84648	1·48893	0·23149	1·32828	96·424
4	0·84084	1·48407	0·23203	1·32822	96·896
5	0·83548	1·47912	0·23256	1·32818	97·362
6	0·83040	1·47411	0·23308	1·32817	97·822
7	0·82564	1·46902	0·23360	1·32817	98·277
8	0·82119	1·46384	0·23413	1·32818	98·724
9	0·81705	1·45860	0·23466	1·32819	99·167
10	0·81325	1·45327	0·23517	1·32822	99·606
11	0·80981	1·44785	0·23567	1·32825	100·037
12	0·80671	1·44236	0·23617	1·32829	100·462
13	0·80398	1·43679	0·23667	1·32836	100·880
14	0·80163	1·43114	0·23717	1·32844	101·290
15	0·79964	1·42541	0·23767	1·32853	101·694
16	0·79805	1·41960	0·23817	1·32864	102·091
17	0·79683	1·41370	0·23867	1·32876	102·480
18	0·79600	1·40773	0·23917	1·32889	102·863
19	0·79557	1·40167	0·23967	1·32904	103·237
20	0·79553	1·39553	0·24016	1·32920	103·604
21	0·79588	1·38931	0·24065	1·32938	103·962
22	0·79661	1·38300	0·24114	1·32957	104·312
23	0·79773	1·37661	0·24163	1·32977	104·655
24	0·79922	1·37014	0·24212	1·32998	104·989
25	0·80111	1·36358	0·24261	1·33021	105·314
26	0·80337	1·35693	0·24311	1·33045	105·632
27	0·80599	1·35020	0·24361	1·33070	105·941
28	0·80896	1·34338	0·24411	1·33097	106·242
29	0·81227	1·33647	0·24461	1·33125	106·533
30	0·81592	1·32947	0·24512	1·33153	106·816
31	0·81988	1·32238	0·24562	1·33183	107·090
32	0·82419	1·31521	0·24612	1·33214	107·354

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Day of the Month.	Bessel's Day Numbers— For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of A	B	C	D	Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding $0^d{\cdot}207409$ / $0^d{\cdot}965193$ Days.	From Mean Noon of January 1. Day of the Year.	Fraction of the Year.*
					h m s			
1	−1·2499	+0·8135	+9·6988	−0·5680	1 22 41·28	344	59	·1615
2	1·2524	0·7902	9·7007	0·5684	1 18 45·38	345	60	·1643
3	1·2547	0·7655	9·7025	0·5688	1 14 49·47	346	61	·1670
4	−1·2569	+0·7391	+9·7043	−0·5690	1 10 53·56	347	62	·1698
5	1·2590	0·7109	9·7061	0·5693	1 6 57·66	348	63	·1725
6	1·2609	0·6806	9·7079	0·5694	1 3 1·75	349	64	·1752
7	−1·2626	+0·6479	+9·7096	−0·5694	0 59 5·84	350	65	·1780
8	1·2642	0·6124	9·7114	0·5694	0 55 9·93	351	66	·1807
9	1·2657	0·5737	9·7131	0·5694	0 51 14·03	352	67	·1834
10	−1·2671	+0·5310	+9·7148	−0·5692	0 47 18·12	353	68	·1862
11	1·2683	0·4836	9·7165	0·5690	0 43 22·21	354	69	·1889
12	1·2693	0·4302	9·7181	0·5687	0 39 26·30	355	70	·1917
13	−1·2703	+0·3692	+9·7198	−0·5683	0 35 30·40	356	71	·1944
14	1·2711	0·2981	9·7215	0·5678	0 31 34·49	357	72	·1971
15	1·2717	0·2129	9·7231	0·5673	0 27 38·58	358	73	·1999
16	−1·2723	+0·1067	+9·7247	−0·5667	0 23 42·67	359	74	·2026
17	1·2727	9·9659	9·7263	0·5660	0 19 46·77	360	75	·2053
18	1·2730	9·7560	9·7279	0·5652	0 15 50·86	361	76	·2081
19	−1·2731	+9·3346	+9·7295	−0·5644	0 11 54·95	362	77	·2108
20	1·2731	−9·1395	9·7311	0·5634	0 7 59·05	363	78	·2136
21	1·2730	9·6918	9·7327	0·5624	0 4 3·14	364	79	·2163
22	−1·2728	−9·9268	+9·7343	−0·5613	{0 0 7·24 / 23 56 11·32}	365	80	·2190
23	1·2724	0·0784	9·7359	0·5602	23 52 15·41	0	81	·2218
24	1·2719	0·1904	9·7375	0·5589	23 48 19·51	1	82	·2245
25	−1·2712	−0·2792	+9·7391	−0·5576	23 44 23·60	2	83	·2272
26	1·2705	0·3527	9·7406	0·5561	23 40 27·69	3	84	·2300
27	1·2696	0·4154	9·7422	0·5546	23 36 31·79	4	85	·2327
28	−1·2686	−0·4701	+9·7438	−0·5530	23 32 35·88	5	86	·2355
29	1·2674	0·5185	9·7454	0·5514	23 28 39·97	6	87	·2382
30	1·2661	0·5619	9·7469	0·5496	23 24 44·07	7	88	·2409
31	1·2647	0·6012	9·7485	0·5478	23 20 48·16	8	89	·2437
32	−1·2631	−0·6371	+9·7501	−0·5459	23 16 52·25	9	90	·2464

* Add ·0031 if Fraction be required for the time t, see page 327.

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AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 hour.	THE SUN'S Apparent Declination.	Diff. for 1 hour.	Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, *to be added to* / *subt. from* Apparent Time.	Diff. for 1 hour.
		h m s	s	° ′ ″	″	m s	m s	s
Mon.	1	0 43 12·45	9·099	N. 4 38 58·0	57·68	1 4·49	3 53·53	0·755
Tues.	2	0 46 50·82	9·105	5 2 2·4	57·46	1 4·51	3 35·40	0·749
Wed.	3	0 50 29·34	9·112	5 25 1·4	57·23	1 4·53	3 17·42	0·743
Thur.	4	0 54 8·02	9·120	5 47 54·8	56·98	1 4·55	2 59·59	0·735
Frid.	5	0 57 46·89	9·128	6 10 42·3	56·72	1 4·58	2 41·95	0·726
Sat.	6	1 1 25·96	9·138	6 33 23·5	56·44	1 4·61	2 24·52	0·717
Sun.	7	1 5 5·26	9·148	6 55 58·1	56·15	1 4·64	2 7·31	0·707
Mon.	8	1 8 44·80	9·158	7 18 25·6	55·84	1 4·67	1 50·34	0·697
Tues.	9	1 12 24·58	9·168	7 40 45·7	55·51	1 4·71	1 33·61	0·686
Wed.	10	1 16 4·61	9·180	8 2 58·0	55·18	1 4·75	1 17·14	0·675
Thur.	11	1 19 44·92	9·192	8 25 2·3	54·83	1 4·79	1 0·95	0·663
Frid.	12	1 23 25·53	9·204	8 46 58·1	54·46	1 4·83	0 45·05	0·651
Sat.	13	1 27 6·44	9·217	9 8 45·0	54·07	1 4·88	0 29·45	0·638
Sun.	14	1 30 47·66	9·231	9 30 22·7	53·68	1 4·93	0 14·15	0·624
Mon.	15	1 34 29·21	9·245	9 51 50·9	53·27	1 4·98	0 0·81	0·609
Tues.	16	1 38 11·10	9·260	10 13 9·3	52·84	1 5·04	0 15·43	0·594
Wed.	17	1 41 53·35	9·275	10 34 17·5	52·40	1 5·10	0 29·70	0·579
Thur.	18	1 45 35·96	9·291	10 55 15·1	51·95	1 5·16	0 43·60	0·563
Frid.	19	1 49 18·96	9·308	11 16 1·9	51·48	1 5·22	0 57·12	0·547
Sat.	20	1 53 2·36	9·325	11 36 37·5	51·00	1 5·28	1 10·24	0·530
Sun.	21	1 56 46·18	9·343	11 57 1·7	50·51	1 5·34	1 22·96	0·512
Mon.	22	2 0 30·41	9·362	12 17 14·0	50·01	1 5·41	1 35·25	0·493
Tues.	23	2 4 15·08	9·381	12 37 14·3	49·50	1 5·47	1 47·10	0·474
Wed.	24	2 8 0·22	9·401	12 57 2·2	48·97	1 5·54	1 58·48	0·455
Thur.	25	2 11 45·82	9·421	13 16 37·4	48·43	1 5·61	2 9·39	0·435
Frid.	26	2 15 31·92	9·442	13 35 59·6	47·87	1 5·68	2 19·82	0·414
Sat.	27	2 19 18·53	9·463	13 55 8·4	47·30	1 5·75	2 29·74	0·392
Sun.	28	2 23 5·65	9·485	14 14 3·6	46·72	1 5·83	2 39·15	0·370
Mon.	29	2 26 53·31	9·508	14 32 45·0	46·13	1 5·90	2 48·03	0·348
Tues.	30	2 30 41·50	9·531	14 51 12·2	45·53	1 5·98	2 56·37	0·324
Wed.	31	2 34 30·25		N.15 9 24·8		1 6·06	3 4·15	

* *Mean* Time of the Semidiameter passing may be found by subtracting 0ˢ·18 from the *Sidereal* Time.

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AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	THE SUN'S Apparent Declination.	THE SUN'S Semidiam.*	Equation of Time, to be subt. from / added to Mean Time.	Sidereal Time.
		h m s	° ′ ″	′ ″	m s	h m s
Mon.	1	0 43 11·86	N. 4 38 54·3	16 1·7	3 53·58	0 39 18·28
Tues.	2	0 46 50·28	5 1 58·9	16 1·5	3 35·45	0 43 14·83
Wed.	3	0 50 28·85	5 24 58·3	16 1·2	3 17·46	0 47 11·39
Thur.	4	0 54 7·57	5 47 52·0	16 0·9	2 59·63	0 51 7·94
Frid.	5	0 57 46·48	6 10 39·7	16 0·6	2 41·98	0 55 4·50
Sat.	6	1 1 25·59	6 33 21·2	16 0·3	2 24·54	0 59 1·05
Sun.	7	1 5 4·94	6 55 56·1	16 0·0	2 7·34	1 2 57·60
Mon.	8	1 8 44·52	7 18 23·9	15 59·8	1 50·36	1 6 54·15
Tues.	9	1 12 24·34	7 40 44·3	15 59·5	1 33·63	1 10 50·71
Wed.	10	1 16 4·41	8 2 56·9	15 59·2	1 17·15	1 14 47·26
Thur.	11	1 19 44·77	8 25 1·4	15 59·0	1 0·95	1 18 43·82
Frid.	12	1 23 25·42	8 46 57·4	15 58·7	0 45·05	1 22 40·37
Sat.	13	1 27 6·37	9 8 44·6	15 58·5	0 29·45	1 26 36·92
Sun.	14	1 30 47·63	9 30 22·5	15 58·2	0 14·15	1 30 33·47
Mon.	15	1 34 29·22	9 51 50·9	15 57·9	0 0·81	1 34 30·03
Tues.	16	1 38 11·15	10 13 9·5	15 57·6	0 15·44	1 38 26·58
Wed.	17	1 41 53·43	10 34 17·9	15 57·4	0 29·71	1 42 23·14
Thur.	18	1 45 36·08	10 55 15·7	15 57·1	0 43·62	1 46 19·69
Frid.	19	1 49 19·12	11 16 2·7	15 56·9	0 57·13	1 50 16·25
Sat.	20	1 53 2·55	11 36 38·5	15 56·6	1 10·25	1 54 12·80
Sun.	21	1 56 46·39	11 57 2·9	15 56·4	1 22·97	1 58 9·36
Mon.	22	2 0 30·65	12 17 15·4	15 56·1	1 35·26	2 2 5·91
Tues.	23	2 4 15·36	12 37 15·8	15 55·9	1 47·11	2 6 2·47
Wed.	24	2 8 0·52	12 57 3·8	15 55·6	1 58·49	2 9 59·02
Thur.	25	2 11 46·16	13 16 39·1	15 55·4	2 9·41	2 13 55·57
Frid.	26	2 15 32·29	13 36 1·4	15 55·1	2 19·84	2 17 52·13
Sat.	27	2 19 18·92	13 55 10·4	15 54·9	2 29·76	2 21 48·68
Sun.	28	2 23 6·07	14 14 5·8	15 54·6	2 39·17	2 25 45·24
Mon.	29	2 26 53·75	14 32 47·2	15 54·4	2 48·04	2 29 41·79
Tues.	30	2 30 41·97	14 51 14·4	15 54·1	2 56·38	2 33 38·35
Wed.	31	2 34 30·74	N. 15 9 27·1	15 53·9	3 4·16	2 37 34·90

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

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MEAN TIME.

Day of the Month.	THE SUN'S *Apparent* Longitude. *Noon.*	THE SUN'S *Apparent* Latitude. *Noon.*	Logarithm of the Radius Vector of the Earth. *Noon.*	THE MOON'S Semidiameter. *Noon.*	THE MOON'S Semidiameter. *Midnight.*	THE MOON'S Horizontal Parallax. *Noon.*	THE MOON'S Horizontal Parallax. *Midnight.*
	° ′ ″	″		′ ″	′ ″	′ ″	′ ″
1	11 44 47·2	S. 0·18	0·0000340	15 47·2	15 40·0	57 48·3	57 21·7
2	12 43 53·2	S. 0·05	0·0001621	15 33·0	15 26·4	56 56·1	56 31·9
3	13 42 57·5	N. 0·09	0·0002902	15 20·2	15 14·6	56 9·4	55 48·6
4	14 41 59·9	0·22	0·0004180	15 9·4	15 4·7	55 29·6	55 12·4
5	15 41 0·4	0·35	0·0005455	15 0·5	14 56·8	54 57·2	54 43·7
6	16 39 59·2	0·47	0·0006725	14 53·7	14 51·0	54 32·1	54 22·2
7	17 38 56·3	0·57	0·0007987	14 48·7	14 46·9	54 13·9	54 7·2
8	18 37 51·6	0·64	0·0009240	14 45·4	14 44·4	54 2·0	53 58·2
9	19 36 44·9	0·68	0·0010484	14 43·7	14 43·5	53 55·8	53 54·8
10	20 35 36·2	0·69	0·0011718	14 43·6	14 44·0	53 55·1	53 56·8
11	21 34 25·5	0·67	0·0012942	14 44·8	14 46·0	53 59·8	54 4·2
12	22 33 12·7	0·62	0·0014156	14 47·6	14 49·6	54 10·0	54 17·2
13	23 31 57·7	0·55	0·0015360	14 52·0	14 54·8	54 26·0	54 36·4
14	24 30 40·5	0·45	0·0016554	14 58·1	15 1·9	54 48·4	55 2·2
15	25 29 21·2	0·34	0·0017739	15 6·1	15 10·9	55 17·7	55 35·1
16	26 27 59·7	0·21	0·0018916	15 16·1	15 21·8	55 54·2	56 15·1
17	27 26 35·9	N. 0·08	0·0020086	15 27·9	15 34·5	56 37·6	57 1·7
18	28 25 9·9	S. 0·05	0·0021249	15 41·4	15 48·7	57 27·0	57 53·5
19	29 23 41·7	0·16	0·0022406	15 56·0	16 3·5	58 20·5	58 47·8
20	30 22 11·4	0·26	0·0023558	16 10·9	16 18·0	59 14·8	59 40·8
21	31 20 38·9	0·33	0·0024706	16 24·7	16 30·7	60 5·3	60 27·5
22	32 19 4·3	0·38	0·0025851	16 36·0	16 40·3	60 46·8	61 2·4
23	33 17 27·7	0·40	0·0026993	16 43·4	16 45·3	61 13·9	61 20·7
24	34 15 49·1	0·40	0·0028133	16 45·8	16 44·9	61 22·7	61 19·5
25	35 14 8·7	0·36	0·0029270	16 42·7	16 39·2	61 11·5	60 58·6
26	36 12 26·5	0·28	0·0030404	16 34·6	16 28·9	60 41·6	60 20·8
27	37 10 42·6	0·18	0·0031534	16 22·4	16 15·2	59 56·9	59 30·6
28	38 8 57·1	S. 0·07	0·0032659	16 7·6	15 59·7	59 2·7	58 33·8
29	39 7 10·0	N. 0·07	0·0033779	15 51·7	15 43·8	58 4·6	57 35·7
30	40 5 21·4	0·21	0·0034891	15 36·1	15 28·8	57 7·6	56 40·8
31	41 3 31·4	N. 0·34	0·0035994	15 21·9	15 15·5	56 15·5	55 52·2

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THE MOON'S

Day of the Week.	Day of the Month.	Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.	Age. Noon.	Meridian Passage.
		° ′ ″	° ′ ″	° ′ ″	° ′ ″	d	h m
Mon.	1	272 21 1·0	278 59 56·7	S. 1 25 58·4	S. 0 51 44·8	20·9	18 11·8
Tues.	2	285 32 41·1	291 59 43·7	S. 0 17 21·3	N. 0 16 45·9	21·9	19 4·1
Wed.	3	298 21 36·3	304 38 52·1	N. 0 50 12·4	1 22 36·6	22·9	19 52·3
Thur.	4	310 52 4·0	317 1 44·3	1 53 39·1	2 23 2·0	23·9	20 37·1
Frid.	5	323 8 23·8	329 12 30·9	2 50 29·3	3 15 46·6	24·9	21 19·4
Sat.	6	335 14 31·8	341 14 50·2	3 38 41·2	3 59 1·2	25·9	22 0·1
Sun.	7	347 13 46·8	353 11 40·1	4 16 36·5	4 31 18·4	26·9	22 40·3
Mon.	8	359 8 45·8	5 5 17·9	4 42 59·0	4 51 33·1	27·9	23 20·8
Tues.	9	11 1 28·4	16 57 28·0	4 56 56·0	4 59 4·9	28·9	0
Wed.	10	22 53 26·7	28 49 34·1	4 57 58·5	4 53 37·8	0·2	0 2·4
Thur.	11	34 46 0·0	40 42 55·0	4 46 4·4	4 35 22·7	1·2	0 45·9
Frid.	12	46 40 31·1	52 39 1·3	4 21 38·0	4 4 57·4	2·2	1 31·7
Sat.	13	58 38 41·9	64 39 50·3	3 45 29·2	3 23 23·7	3·2	2 20·1
Sun.	14	70 42 47·4	76 47 56·1	2 58 52·3	2 32 7·7	4·2	3 10·6
Mon.	15	82 55 42·1	89 6 33·8	2 3 23·6	1 32 56·1	5·2	4 2·8
Tues.	16	95 21 1·2	101 39 35·5	N. 1 1 2·8	N. 0 28 2·0	6·2	4 55·5
Wed.	17	108 2 49·4	114 31 14·9	S. 0 5 45·3	S. 0 39 56·3	7·2	5 47·9
Thur.	18	121 5 23·0	127 45 41·7	1 14 5·8	1 47 46·6	8·2	6 39·5
Frid.	19	134 32 34·8	141 26 20·4	2 20 28·7	2 51 40·4	9·2	7 30·2
Sat.	20	148 27 8·3	155 34 59·0	3 20 48·5	3 47 17·6	10·2	8 20·4
Sun.	21	162 49 40·8	170 10 49·4	4 10 33·1	4 30 0·7	11·2	9 10·9
Mon.	22	177 37 46·9	185 9 41·1	4 45 9·5	4 55 32·0	12·2	10 2·9
Tues.	23	192 45 27·6	200 23 50·4	5 0 48·4	5 0 45·0	13·2	10 57·2
Wed.	24	208 3 26·2	215 42 47·6	4 55 18·4	4 44 33·5	14·2	11 54·8
Thur.	25	223 20 27·3	230 55 2·5	4 28 45·5	4 8 18·2	15·2	12 55·6
Frid.	26	238 25 18·1	245 50 10·7	3 43 42·2	3 15 33·4	16·2	13 58·4
Sat.	27	253 8 49·4	260 20 37·6	2 44 31·5	2 11 17·3	17·2	15 0·9
Sun.	28	267 25 12·3	274 22 24·0	1 36 31·2	S. 1 0 51·6	18·2	16 0·9
Mon.	29	281 12 14·4	287 54 55·6	S. 0 24 54·4	N. 0 10 47·9	19·2	16 56·6
Tues.	30	294 30 47·2	301 0 15·5	N. 0 45 46·7	1 19 36·5	20·2	17 47·6
Wed.	31	307 23 51·1	313 42 7·5	N. 1 51 55·7	N. 2 22 25·3	21·2	18 34·4

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 1.				*WEDNESDAY* 3.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	18 10 21·57	S. 24 52 12·6	35·08	0	20 1 10·69	S. 19 41 10·9	90·85
1	18 12 48·87	24 48 42·2	36·53	1	20 3 19·75	19 32 5·8	91·71
2	18 15 15·83	24 45 3·0	37·97	2	20 5 28·44	19 22 55·5	92·56
3	18 17 42·45	24 41 15·1	39·40	3	20 7 36·75	19 13 40·1	93·39
4	18 20 8·72	24 37 18·7	40·82	4	20 9 44·70	19 4 19·8	94·21
5	18 22 34·65	24 33 13·8	42·22	5	20 11 52·27	18 54 54·5	95·02
6	18 25 0·23	24 29 0·5	43·62	6	20 13 59·48	18 45 24·4	95·82
7	18 27 25·45	24 24 38·8	45·00	7	20 16 6·32	18 35 49·5	96·60
8	18 29 50·31	24 20 8·8	46·37	8	20 18 12·80	18 26 9·9	97·38
9	18 32 14·81	24 15 30·6	47·72	9	20 20 18·92	18 16 25·6	98·14
10	18 34 38·94	24 10 44·3	49·07	10	20 22 24·68	18 6 36·8	98·89
11	18 37 2·71	24 5 49·8	50·41	11	20 24 30·09	17 56 43·4	99·63
12	18 39 26·10	24 0 47·4	51·72	12	20 26 35·14	17 46 45·6	100·36
13	18 41 49·12	23 55 37·1	53·03	13	20 28 39·84	17 36 43·4	101·08
14	18 44 11·77	23 50 18·9	54·33	14	20 30 44·19	17 26 36·9	101·79
15	18 46 34·05	23 44 52·9	55·61	15	20 32 48·20	17 16 26·2	102·48
16	18 48 55·94	23 39 19·2	56·88	16	20 34 51·86	17 6 11·3	103·17
17	18 51 17·45	23 33 37·9	58·14	17	20 36 55·18	16 55 52·3	103·84
18	18 53 38·58	23 27 49·0	59·39	18	20 38 58·17	16 45 29·3	104·50
19	18 55 59·32	23 21 52·7	60·62	19	20 41 0·83	16 35 2·3	105·16
20	18 58 19·67	23 15 49·0	61·84	20	20 43 3·15	16 24 31·4	105·80
21	19 0 39·64	23 9 37·9	63·05	21	20 45 5·15	16 13 56·6	106·43
22	19 2 59·22	23 3 19·6	64·24	22	20 47 6·82	16 3 18·0	107·05
23	19 5 18·41	S. 22 56 54·2	65·42	23	20 49 8·18	S. 15 52 35·7	107·66
	TUESDAY 2.				*THURSDAY* 4.		
0	19 7 37·21	S. 22 50 21·6	66·60	0	20 51 9·21	S. 15 41 49·8	108·26
1	19 9 55·62	22 43 42·0	67·76	1	20 53 9·93	15 31 0·3	108·84
2	19 12 13·63	22 36 55·5	68·90	2	20 55 10·34	15 20 7·2	109·42
3	19 14 31·25	22 30 2·1	70·03	3	20 57 10·44	15 9 10·7	109·99
4	19 16 48·48	22 23 1·9	71·15	4	20 59 10·24	14 58 10·7	110·55
5	19 19 5·31	22 15 55·0	72·25	5	21 1 9·74	14 47 7·4	111·10
6	19 21 21·75	22 8 41·5	73·35	6	21 3 8·94	14 36 0·8	111·63
7	19 23 37·79	22 1 21·4	74·43	7	21 5 7·84	14 24 51·0	112·16
8	19 25 53·44	21 53 54·8	75·49	8	21 7 6·45	14 13 38·1	112·68
9	19 28 8·70	21 46 21·9	76·55	9	21 9 4·78	14 2 22·0	113·19
10	19 30 23·56	21 38 42·6	77·58	10	21 11 2·82	13 51 2·8	113·69
11	19 32 38·03	21 30 57·1	78·61	11	21 13 0·58	13 39 40·7	114·18
12	19 34 52·10	21 23 5·4	79·63	12	21 14 58·07	13 28 15·6	114·66
13	19 37 5·78	21 15 7·6	80·64	13	21 16 55·28	13 16 47·6	115·13
14	19 39 19·07	21 7 3·8	81·63	14	21 18 52·23	13 5 16·9	115·59
15	19 41 31·97	20 58 54·0	82·61	15	21 20 48·90	12 53 43·3	116·04
16	19 43 44·48	20 50 38·3	83·57	16	21 22 45·31	12 42 7·0	116·49
17	19 45 56·60	20 42 16·9	84·52	17	21 24 41·47	12 30 28·1	116·92
18	19 48 8·34	20 33 49·8	85·46	18	21 26 37·37	12 18 46·6	117·34
19	19 50 19·69	20 25 17·0	86·39	19	21 28 33·01	12 7 2·5	117·76
20	19 52 30·65	20 16 38·6	87·31	20	21 30 28·41	11 55 16·0	118·16
21	19 54 41·23	20 7 54·7	88·21	21	21 32 23·56	11 43 27·0	118·56
22	19 56 51·43	19 59 5·4	89·11	22	21 34 18·48	11 31 35·6	118·95
23	19 59 1·25	19 50 10·8	89·99	23	21 36 13·15	11 19 42·0	119·32
24	20 1 10·69	S. 19 41 10·9		24	21 38 7·59	S. 11 7 46·0	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 5.				*SUNDAY 7.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	21 38 7·59	S. 11 7 46·0	119·70	0	23. 6 21·29	S. 1 6 28·8	128·05
1	21 40 1·80	10 55 47·8	120·06	1	23 8 8·97	0 53 40·5	128·04
2	21 41 55·79	10 43 47·5	120·41	2	23 9 56·61	0 40 52·2	128·03
3	21 43 49·56	10 31 45·0	120·76	3	23 11 44·21	0 28 4·0	128·01
4	21 45 43·11	10 19 40·4	121·09	4	23 13 31·76	0 15 16·0	127·98
5	21 47 36·44	10 7 33·9	121·42	5	23 15 19·29	S. 0 2 28·1	127·94
6	21 49 29·56	9 55 25·4	121·74	6	23 17 6·79	N. 0 10 19·5	127·89
7	21 51 22·47	9 43 14·9	122·05	7	23 18 54·26	0 23 6·9	127·84
8	21 53 15·19	9 31 2·6	122·35	8	23 20 41·71	0 35 53·9	127·78
9	21 55 7·70	9 18 48·5	122·65	9	23 22 29·14	0 48 40·6	127·72
10	21 57 0·02	9 6 32·6	122·94	10	23 24 16·55	1 1 26·9	127·65
11	21 58 52·15	8 54 15·0	123·21	11	23 26 3·95	1 14 12·8	127·57
12	22 0 44·09	8 41 55·7	123·48	12	23 27 51·35	1 26 58·2	127·47
13	22 2 35·85	8 29 34·8	123·74	13	23 29 38·74	1 39 43·0	127·38
14	22 4 27·43	8 17 12·4	124·00	14	23 31 26·13	1 52 27·3	127·28
15	22 6 18·83	8 4 48·4	124·24	15	23 33 13·53	2 5 11·0	127·17
16	22 8 10·06	7 52 22·9	124·48	16	23 35 0·93	2 17 54·0	127·06
17	22 10 1·12	7 39 56·0	124·71	17	23 36 48·34	2 30 36·4	126·94
18	22 11 52·01	7 27 27·8	124·93	18	23 38 35·76	2 43 18·0	126·81
19	22 13 42·74	7 14 58·2	125·14	19	23 40 23·20	2 55 58·9	126·67
20	22 15 33·32	7 2 27·3	125·35	20	23 42 10·66	3 8 38·9	126·53
21	22 17 23·74	6 49 55·2	125·55	21	23 43 58·14	3 21 18·1	126·38
22	22 19 14·02	6 37 21·9	125·74	22	23 45 45·66	3 33 56·4	126·22
23	22 21 4·15	S. 6 24 47·5	125·92	23	23 47 33·20	N. 3 46 33·7	126·06
	SATURDAY 6.				*MONDAY 8.*		
0	22 22 54·13	S. 6 12 12·0	126·09	0	23 49 20·77	N. 3 59 10·1	125·88
1	22 24 43·98	5 59 35·4	126·26	1	23 51 8·38	4 11 45·4	125·71
2	22 26 33·70	5 46 57·9	126·42	2	23 52 56·03	4 24 19·7	125·52
3	22 28 23·29	5 34 19·4	126·57	3	23 54 43·73	4 36 52·8	125·33
4	22 30 12·75	5 21 40·0	126·71	4	23 56 31·47	4 49 24·8	125·13
5	22 32 2·09	5 8 59·7	126·85	5	23 58 19·27	5 1 55·6	124·93
6	22 33 51·31	4 56 18·6	126·98	6	0 0 7·11	5 14 25·2	124·71
7	22 35 40·42	4 43 36·7	127·10	7	0 1 55·02	5 26 53·4	124·49
8	22 37 29·41	4 30 54·0	127·21	8	0 3 42·99	5 39 20·3	124·26
9	22 39 18·30	4 18 10·7	127·32	9	0 5 31·01	5 51 45·9	124·03
10	22 41 7·08	4 5 26·8	127·42	10	0 7 19·11	6 4 10·1	123·79
11	22 42 55·77	3 52 42·3	127·51	11	0 9 7·27	6 16 32·8	123·54
12	22 44 44·35	3 39 57·2	127·60	12	0 10 55·51	6 28 54·1	123·28
13	22 46 32·85	3 27 11·6	127·68	13	0 12 43·83	6 41 13·8	123·01
14	22 48 21·26	3 14 25·6	127·75	14	0 14 32·23	6 53 31·9	122·74
15	22 50 9·58	3 1 39·1	127·81	15	0 16 20·71	7 5 48·3	122·47
16	22 51 57·82	2 48 52·2	127·87	16	0 18 9·27	7 18 3·1	122·18
17	22 53 45·99	2 36 5·0	127·92	17	0 19 57·93	7 30 16·2	121·89
18	22 55 34·08	2 23 17·5	127·96	18	0 21 46·68	7 42 27·5	121·59
19	22 57 22·10	2 10 29·8	127·99	19	0 23 35·53	7 54 37·0	121·28
20	22 59 10·05	1 57 41·8	128·02	20	0 25 24·47	8 6 44·7	120·96
21	23 0 57·95	1 44 53·7	128·04	21	0 27 13·52	8 18 50·5	120·64
22	23 2 45·78	1 32 5·5	128·05	22	0 29 2·67	8 30 54·4	120·31
23	23 4 33·56	1 19 17·2	128·05	23	0 30 51·93	8 42 56·2	119·97
24	23 6 21·29	S. 1 6 28·8		24	0 32 41·30	N. 8 54 56·0	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 9.				*THURSDAY* 11.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	0 32 41·30	N. 8 54 56·0	119·63	0	2 3 14·49	N.17 36 20·6	94·10
1	0 34 30·79	9 6 53·8	119·28	1	2 5 12·45	17 45 45·2	93·37
2	0 36 20·39	9 18 49·5	118·92	2	2 7 10·63	17 55 5·4	92·64
3	0 38 10·11	9 30 43·0	118·55	3	2 9 9·03	18 4 21·3	91·90
4	0 39 59·95	9 42 34·3	118·18	4	2 11 7·67	18 13 32·7	91·15
5	0 41 49·92	9 54 23·4	117·80	5	2 13 6·54	18 22 39·5	90·39
6	0 43 40·02	10 6 10·1	117·41	6	2 15 5·63	18 31 41·8	89·62
7	0 45 30·25	10 17 54·6	117·01	7	2 17 4·95	18 40 39·6	88·85
8	0 47 20·62	10 29 36·7	116·61	8	2 19 4·51	18 49 32·7	88·06
9	0 49 11·12	10 41 16·3	116·20	9	2 21 4·30	18 58 21·1	87·28
10	0 51 1·75	10 52 53·5	115·78	10	2 23 4·32	19 7 4·8	86·48
11	0 52 52·53	11 4 28·1	115·35	11	2 25 4·58	19 15 43·7	85·67
12	0 54 43·46	11 16 0·2	114·91	12	2 27 5·07	19 24 17·7	84·85
13	0 56 34·54	11 27 29·7	114·47	13	2 29 5·80	19 32 46·8	84·03
14	0 58 25·77	11 38 56·5	114·02	14	2 31 6·77	19 41 11·0	83·20
15	1 0 17·15	11 50 20·6	113·56	15	2 33 7·97	19 49 30·2	82·36
16	1 2 8·69	12 1 42·0	113·10	16	2 35 9·41	19 57 44·4	81·51
17	1 4 0·39	12 13 0·6	112·63	17	2 37 11·10	20 5 53·4	80·66
18	1 5 52·25	12 24 16·4	112·15	18	2 39 13·02	20 13 57·4	79·79
19	1 7 44·27	12 35 29·3	111·66	19	2 41 15·18	20 21 56·2	78·92
20	1 9 36·46	12 46 39·3	111·17	20	2 43 17·58	20 29 49·7	78·04
21	1 11 28·82	12 57 46·3	110·67	21	2 45 20·22	20 37 37·9	77·15
22	1 13 21·35	13 8 50·3	110·16	22	2 47 23·09	20 45 20·8	76·26
23	1 15 14·05	N.13 19 51·3	109·64	23	2 49 26·21	N.20 52 58·4	75·35
	WEDNESDAY 10.				*FRIDAY* 12.		
0	1 17 6·93	N.13 30 49·1	109·11	0	2 51 29·57	N.21 0 30·5	74·44
1	1 18 59·99	13 41 43·8	108·58	1	2 53 33·17	21 7 57·2	73·52
2	1 20 53·23	13 52 35·3	108·04	2	2 55 37·01	21 15 18·3	72·59
3	1 22 46·65	14 3 23·5	107·49	3	2 57 41·09	21 22 33·9	71·66
4	1 24 40·25	14 14 8·4	106·93	4	2 59 45·40	21 29 43·8	70·72
5	1 26 34·05	14 24 50·0	106·37	5	3 1 49·96	21 36 48·1	69·77
6	1 28 28·03	14 35 28·2	105·79	6	3 3 54·75	21 43 46·7	68·81
7	1 30 22·20	14 46 3·0	105·21	7	3 5 59·79	21 50 39·6	67·84
8	1 32 16·57	14 56 34·3	104·62	8	3 8 5·06	21 57 26·6	66·87
9	1 34 11·14	15 7 2·0	104·02	9	3 10 10·57	22 4 7·8	65·89
10	1 36 5·91	15 17 26·2	103·42	10	3 12 16·32	22 10 43·2	64·90
11	1 38 0·87	15 27 46·7	102·80	11	3 14 22·30	22 17 12·6	63·90
12	1 39 56·04	15 38 3·4	102·18	12	3 16 28·51	22 23 35·9	62·89
13	1 41 51·41	15 48 16·5	101·55	13	3 18 34·96	22 29 53·2	61·88
14	1 43 46·99	15 58 25·8	100·91	14	3 20 41·65	22 36 4·5	60·86
15	1 45 42·77	16 8 31·2	100·27	15	3 22 48·57	22 42 9·7	59·83
16	1 47 38·77	16 18 32·8	99·62	16	3 24 55·72	22 48 8·7	58·80
17	1 49 34·98	16 28 30·5	98·96	17	3 27 3·10	22 54 1·5	57·76
18	1 51 31·40	16 38 24·3	98·28	18	3 29 10·72	22 59 48·0	56·71
19	1 53 28·03	16 48 14·0	97·60	19	3 31 18·56	23 5 28·3	55·65
20	1 55 24·88	16 57 59·6	96·92	20	3 33 26·62	23 11 2·2	54·59
21	1 57 21·96	17 7 41·1	96·23	21	3 35 34·91	23 16 29·7	53·52
22	1 59 19·25	17 17 18·5	95·53	22	3 37 43·43	23 21 50·8	52·44
23	2 1 16·76	17 26 51·7	94·82	23	3 39 52·17	23 27 5·4	51·35
24	2 3 14·49	N.17 36 20·6		24	3 42 1·12	N.23 32 13·5	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 13.		
	h m s	° ′ ″	″
0	3 42 1·12	N.23 32 13·5	50·26
1	3 44 10·30	23 37 15·1	49·16
2	3 46 19·69	23 42 10·0	48·05
3	3 48 29·30	23 46 58·3	46·94
4	3 50 39·12	23 51 40·0	45·82
5	3 52 49·15	23 56 14·9	44·70
6	3 54 59·39	24 0 43·1	43·57
7	3 57 9·84	24 5 4·5	42·43
8	3 59 20·49	24 9 19·1	41·29
9	4 1 31·35	24 13 26·8	40·14
10	4 3 42·40	24 17 27·6	38·98
11	4 5 53·65	24 21 21·5	37·82
12	4 8 5·10	24 25 8·4	36·65
13	4 10 16·74	24 28 48·3	35·47
14	4 12 28·58	24 32 21·1	34·29
15	4 14 40·60	24 35 46·9	33·10
16	4 16 52·81	24 39 5·5	31·91
17	4 19 5·20	24 42 16·9	30·71
18	4 21 17·77	24 45 21·1	29·50
19	4 23 30·52	24 48 18·1	28·29
20	4 25 43·44	24 51 7·9	27·08
21	4 27 56·53	24 53 50·4	25·86
22	4 30 9·78	24 56 25·6	24·63
23	4 32 23·20	N.24 58 53·4	23·40
	SUNDAY 14.		
0	4 34 36·79	N.25 1 13·7	22·17
1	4 36 50·54	25 3 26·7	20·93
2	4 39 4·44	25 5 32·3	19·68
3	4 41 18·49	25 7 30·4	18·43
4	4 43 32·69	25 9 21·0	17·18
5	4 45 47·03	25 11 4·1	15·92
6	4 48 1·52	25 12 39·7	14·66
7	4 50 16·15	25 14 7·6	13·39
8	4 52 30·91	25 15 28·0	12·12
9	4 54 45·81	25 16 40·7	10·85
10	4 57 0·83	25 17 45·8	9·57
11	4 59 15·97	25 18 43·2	8·28
12	5 1 31·24	25 19 32·9	7·00
13	5 3 46·63	25 20 14·9	5·71
14	5 6 2·12	25 20 49·2	4·42
15	5 8 17·73	25 21 15·7	3·12
16	5 10 33·44	25 21 34·4	1·82
17	5 12 49·26	25 21 45·3	0·52
18	5 15 5·18	25 21 48·5	0·78
19	5 17 21·19	25 21 43·8	2·09
20	5 19 37·29	25 21 31·3	3·40
21	5 21 53·48	25 21 10·9	4·71
22	5 24 9·75	25 20 42·7	6·02
23	5 26 26·10	25 20 6·5	7·33
24	5 28 42·53	N.25 19 22·5	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 15.		
	h m s	° ′ ″	″
0	5 28 42·53	N.25 19 22·5	8·65
1	5 30 59·03	25 18 30·6	9·97
2	5 33 15·60	25 17 30·7	11·29
3	5 35 32·24	25 16 23·0	12·62
4	5 37 48·93	25 15 7·3	13·94
5	5 40 5·68	25 13 43·6	15·26
6	5 42 22·49	25 12 12·0	16·59
7	5 44 39·35	25 10 32·5	17·92
8	5 46 56·25	25 8 45·0	19·25
9	5 49 13·19	25 6 49·5	20·58
10	5 51 30·17	25 4 46·0	21·91
11	5 53 47·19	25 2 34·6	23·24
12	5 56 4·23	25 0 15·2	24·56
13	5 58 21·30	24 57 47·8	25·89
14	6 0 38·40	24 55 12·5	27·22
15	6 2 55·52	24 52 29·1	28·56
16	6 5 12·65	24 49 37·8	29·89
17	6 7 29·79	24 46 38·5	31·21
18	6 9 46·95	24 43 31·2	32·54
19	6 12 4·11	24 40 15·9	33·87
20	6 14 21·27	24 36 52·6	35·20
21	6 16 38·42	24 33 21·4	36·53
22	6 18 55·57	24 29 42·2	37·86
23	6 21 12·72	N.24 25 55·1	39·18
	TUESDAY 16.		
0	6 23 29·85	N.24 22 0·0	40·51
1	6 25 46·97	24 17 57·0	41·83
2	6 28 4·06	24 13 46·0	43·15
3	6 30 21·14	24 9 27·0	44·47
4	6 32 38·19	24 5 0·2	45·79
5	6 34 55·21	24 0 25·5	47·11
6	6 37 12·20	23 55 42·8	48·42
7	6 39 29·16	23 50 52·3	49·73
8	6 41 46·08	23 45 53·9	51·04
9	6 44 2·96	23 40 47·7	52·35
10	6 46 19·80	23 35 33·6	53·65
11	6 48 36·59	23 30 11·8	54·95
12	6 50 53·34	23 24 42·1	56·25
13	6 53 10·04	23 19 4·6	57·54
14	6 55 26·68	23 13 19·3	58·83
15	6 57 43·27	23 7 26·3	60·12
16	6 59 59·80	23 1 25·6	61·41
17	7 2 16·27	22 55 17·1	62·69
18	7 4 32·68	22 49 1·0	63·97
19	7 6 49·02	22 42 37·2	65·24
20	7 9 5·30	22 36 5·8	66·51
21	7 11 21·51	22 29 26·7	67·78
22	7 13 37·65	22 22 40·0	69·04
23	7 15 53·71	22 15 45·8	70·30
24	7 18 9·70	N.22 8 44·0	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 17.				*FRIDAY* 19.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	7 18 9·70	N.22 8 44·0	71·55	0	9 5 14·27	N.14 14 29·5	124·44
1	7 20 25·61	22 1 34·7	72·80	1	9 7 26·07	14 2 2·9	125·34
2	7 22 41·44	21 54 17·9	74·04	2	9 9 37·80	13 49 30·8	126·24
3	7 24 57·20	21 46 53·7	75·28	3	9 11 49·47	13 36 53·3	127·13
4	7 27 12·88	21 39 22·0	76·52	4	9 14 1·08	13 24 10·5	128·01
5	7 29 28·47	21 31 42·9	77·75	5	9 16 12·64	13 11 22·5	128·88
6	7 31 43·98	21 23 56·4	78·97	6	9 18 24·14	12 58 29·2	129·74
7	7 33 59·41	21 16 2·5	80·19	7	9 20 35·59	12 45 30·7	130·59
8	7 36 14·75	21 8 1·4	81·40	8	9 22 47·00	12 32 27·2	131·43
9	7 38 30·00	20 59 53·0	82·61	9	9 24 58·35	12 19 18·6	132·26
10	7 40 45·17	20 51 37·3	83·82	10	9 27 9·66	12 6 5·0	133·08
11	7 43 0·24	20 43 14·4	85·02	11	9 29 20·93	11 52 46·5	133·89
12	7 45 15·23	20 34 44·2	86·21	12	9 31 32·16	11 39 23·2	134·69
13	7 47 30·13	20 26 7·0	87·39	13	9 33 43·35	11 25 55·1	135·48
14	7 49 44·93	20 17 22·6	88·57	14	9 35 54·51	11 12 22·2	136·25
15	7 51 59·65	20 8 31·2	89·75	15	9 38 5·64	10 58 44·7	137·02
16	7 54 14·27	19 59 32·7	90·92	16	9 40 16·74	10 45 2·6	137·77
17	7 56 28·79	19 50 27·2	92·08	17	9 42 27·82	10 31 16·0	138·51
18	7 58 43·23	19 41 14·7	93·24	18	9 44 38·88	10 17 24·9	139·24
19	8 0 57·57	19 31 55·3	94·39	19	9 46 49·92	10 3 29·5	139·96
20	8 3 11·81	19 22 29·0	95·53	20	9 49 0·94	9 49 29·7	140·67
21	8 5 25·96	19 12 55·8	96·66	21	9 51 11·95	9 35 25·7	141·37
22	8 7 40·02	19 3 15·8	97·79	22	9 53 22·95	9 21 17·5	142·05
23	8 9 53·98	N.18 53 29·0	98·91	23	9 55 33·95	N. 9 7 5·2	142·72
	THURSDAY 18.				*SATURDAY* 20.		
0	8 12 7·85	N.18 43 35·5	100·03	0	9 57 44·95	N. 8 52 48·9	143·38
1	8 14 21·62	18 33 35·3	101·14	1	9 59 55·95	8 38 28·6	144·03
2	8 16 35·30	18 23 28·5	102·24	2	10 2 6·95	8 24 4·4	144·67
3	8 18 48·89	18 13 15·0	103·34	3	10 4 17·96	8 9 36·4	145·29
4	8 21 2·39	18 2 55·0	104·42	4	10 6 28·98	7 55 4·6	145·90
5	8 23 15·79	17 52 28·4	105·50	5	10 8 40·02	7 40 29·2	146·50
6	8 25 29·10	17 41 55·4	106·57	6	10 10 51·08	7 25 50·2	147·09
7	8 27 42·32	17 31 16·0	107·64	7	10 13 2·16	7 11 7·7	147·66
8	8 29 55·45	17 20 30·2	108·69	8	10 15 13·26	6 56 21·7	148·22
9	8 32 8·50	17 9 38·0	109·74	9	10 17 24·39	6 41 32·4	148·77
10	8 34 21·45	16 58 39·6	110·78	10	10 19 35·56	6 26 39·8	149·30
11	8 36 34·32	16 47 34·9	111·81	11	10 21 46·76	6 11 44·0	149·82
12	8 38 47·10	16 36 24·1	112·83	12	10 23 58·00	5 56 45·1	150·33
13	8 40 59·80	16 25 7·1	113·85	13	10 26 9·29	5 41 43·1	150·83
14	8 43 12·41	16 13 44·0	114·85	14	10 28 20·63	5 26 38·1	151·31
15	8 45 24·94	16 2 14·9	115·85	15	10 30 32·02	5 11 30·3	151·78
16	8 47 37·39	15 50 39·8	116·84	16	10 32 43·46	4 56 19·6	152·23
17	8 49 49·76	15 38 58·7	117·82	17	10 34 54·97	4 41 6·3	152·66
18	8 52 2·05	15 27 11·8	118·80	18	10 37 6·54	4 25 50·3	153·09
19	8 54 14·27	15 15 19·0	119·76	19	10 39 18·18	4 10 31·7	153·50
20	8 56 26·42	15 3 20·4	120·71	20	10 41 29·89	3 55 10·7	153·89
21	8 58 38·49	14 51 16·2	121·66	21	10 43 41·68	3 39 47·4	154·27
22	9 0 50·48	14 39 6·2	122·59	22	10 45 53·55	3 24 21·8	154·64
23	9 3 2·41	14 26 50·6	123·52	23	10 48 5·50	3 8 53·9	154·99
24	9 5 14·27	N.14 14 29·5		24	10 50 17·54	N. 2 53 24·0	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SUNDAY 21.		
	h m s	° ′ ″	″
0	10 50 17·54	N. 2 53 24·0	155·32
1	10 52 29·67	2 37 52·1	153·64
2	10 54 41·90	2 22 18·2	155·95
3	10 56 54·24	2 6 42·5	156·24
4	10 59 6·68	1 51 5·0	156·52
5	11 1 19·22	1 35 25·9	156·78
6	11 3 31·88	1 19 45·2	157·02
7	11 5 44·66	1 4 3·1	157·25
8	11 7 57·56	0 48 19·6	157·46
9	11 10 10·59	0 32 34·9	157·65
10	11 12 23·75	0 16 49·0	157·83
11	11 14 37·04	N. 0 1 2·0	158·00
12	11 16 50·47	S. 0 14 46·0	158·14
13	11 19 4·04	0 30 34·9	158·27
14	11 21 17·76	0 46 24·5	158·38
15	11 23 31·63	1 2 14·8	158·48
16	11 25 45·66	1 18 5·7	158·56
17	11 27 59·85	1 33 57·0	158·62
18	11 30 14·20	1 49 48·7	158·66
19	11 32 28·72	2 5 40·6	158·68
20	11 34 43·41	2 21 32·7	158·69
21	11 36 58·28	2 37 24·9	158·68
22	11 39 13·33	2 53 16·9	158·65
23	11 41 28·56	S. 3 9 8·8	158·60
	MONDAY 22.		
0	11 43 43·99	S. 3 25 0·5	158·54
1	11 45 59·61	3 40 51·8	158·46
2	11 48 15·42	3 56 42·5	158·35
3	11 50 31·43	4 12 32·6	158·23
4	11 52 47·65	4 28 22·0	158·10
5	11 55 4·08	4 44 10·5	157·94
6	11 57 20·72	4 59 58·1	157·76
7	11 59 37·58	5 15 44·7	157·57
8	12 1 54·66	5 31 30·2	157·35
9	12 4 11·96	5 47 14·3	157·12
10	12 6 29·49	6 2 57·0	156·87
11	12 8 47·25	6 18 38·2	156·60
12	12 11 5·25	6 34 17·8	156·31
13	12 13 23·49	6 49 55·7	156·00
14	12 15 41·97	7 5 31·7	155·67
15	12 18 0·70	7 21 5·7	155·32
16	12 20 19·67	7 36 37·6	154·95
17	12 22 38·90	7 52 7·3	154·56
18	12 24 58·39	8 7 34·6	154·15
19	12 27 18·14	8 22 59·5	153·72
20	12 29 38·15	8 38 21·8	153·26
21	12 31 58·43	8 53 41·4	152·79
22	12 34 18·98	9 8 58·1	152·30
23	12 36 39·80	9 24 11·9	151·79
24	12 39 0·89	S. 9 39 22·7	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 23.		
	h m s	° ′ ″	″
0	12 39 0·89	S. 9 39 22·7	151·25
1	12 41 22·26	9 54 30·2	150·70
2	12 43 43·92	10 9 34·4	150·13
3	12 46 5·86	10 24 35·2	149·53
4	12 48 28·08	10 39 32·4	148·91
5	12 50 50·60	10 54 25·9	148·28
6	12 53 13·40	11 9 15·6	147·62
7	12 55 36·50	11 24 1·3	146·95
8	12 57 59·90	11 38 43·0	146·25
9	13 0 23·59	11 53 20·5	145·53
10	13 2 47·58	12 7 53·7	144·79
11	13 5 11·88	12 22 22·4	144·03
12	13 7 36·47	12 36 46·6	143·25
13	13 10 1·37	12 51 6·1	142·45
14	13 12 26·58	13 5 20·8	141·62
15	13 14 52·10	13 19 30·5	140·78
16	13 17 17·92	13 33 35·2	139·91
17	13 19 44·05	13 47 34·7	139·02
18	13 22 10·49	14 1 28·8	138·12
19	13 24 37·25	14 15 17·5	137·19
20	13 27 4·32	14 29 0·7	136·24
21	13 29 31·71	14 42 38·2	135·27
22	13 31 59·41	14 56 9·8	134·29
23	13 34 27·42	S. 15 9 35·5	133·28
	WEDNESDAY 24.		
0	13 36 55·75	S. 15 22 55·2	132·25
1	13 39 24·40	15 36 8·7	131·19
2	13 41 53·36	15 49 15·9	130·12
3	13 44 22·63	16 2 16·6	129·03
4	13 46 52·22	16 15 10·8	127·92
5	13 49 22·12	16 27 58·3	126·79
6	13 51 52·33	16 40 39·0	125·64
7	13 54 22·85	16 53 12·9	124·47
8	13 56 53·68	17 5 39·7	123·28
9	13 59 24·82	17 17 59·4	122·07
10	14 1 56·27	17 30 11·8	120·84
11	14 4 28·03	17 42 16·8	119·59
12	14 7 0·09	17 54 14·3	118·33
13	14 9 32·45	18 6 4·3	117·04
14	14 12 5·12	18 17 46·5	115·73
15	14 14 38·08	18 29 20·9	114·41
16	14 17 11·34	18 40 47·4	113·07
17	14 19 44·89	18 52 5·8	111·71
18	14 22 18·72	19 3 16·1	110·34
19	14 24 52·84	19 14 18·2	108·95
20	14 27 27·25	19 25 11·8	107·53
21	14 30 1·94	19 35 57·0	106·10
22	14 32 36·90	19 46 33·7	104·65
23	14 35 12·13	19 57 1·7	103·21
24	14 37 47·63	S. 20 7 20·9	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 25.				*SATURDAY 27.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	14 37 47·63	S. 20 7 20·9	101·73	0	16 45 23·51	S. 25 6 53·4	18·62
1	14 40 23·39	20 17 31·3	100·23	1	16 48 3·73	25 8 45·1	16·80
2	14 42 59·42	20 27 32·7	98·72	2	16 50 43·83	25 10 25·9	14·98
3	14 45 35·70	20 37 25·0	97·20	3	16 53 23·79	25 11 55·8	13·17
4	14 48 12·22	20 47 8·2	95·66	4	16 56 3·61	25 13 14·8	11·37
5	14 50 48·99	20 56 42·2	94·11	5	16 58 43·29	25 14 23·0	9·57
6	14 53 26·01	21 6 6·9	92·54	6	17 1 22·80	25 15 20·4	7·77
7	14 56 3·25	21 15 22·1	90·96	7	17 4 2·14	25 16 7·0	5·97
8	14 58 40·72	21 24 27·9	89·36	8	17 6 41·31	25 16 42·8	4·19
9	15 1 18·42	21 33 24·1	87·75	9	17 9 20·29	25 17 8·0	2·41
10	15 3 56·33	21 42 10·6	86·13	10	17 11 59·07	25 17 22·4	0·63
11	15 6 34·45	21 50 47·3	84·49	11	17 14 37·65	25 17 26·2	1·13
12	15 9 12·77	21 59 14·3	82·84	12	17 17 16·02	25 17 19·4	2·89
13	15 11 51·29	22 7 31·3	81·18	13	17 19 54·17	25 17 2·1	4·64
14	15 14 30·01	22 15 38·4	79·51	14	17 22 32·08	25 16 34·2	6·39
15	15 17 8·91	22 23 35·5	77·83	15	17 25 9·76	25 15 55·9	8·12
16	15 19 47·99	22 31 22·5	76·13	16	17 27 47·19	25 15 7·1	9·85
17	15 22 27·24	22 38 59·2	74·43	17	17 30 24·37	25 14 8·0	11·56
18	15 25 6·65	22 46 25·8	72·71	18	17 33 1·28	25 12 58·6	13·27
19	15 27 46·21	22 53 42·1	70·99	19	17 35 37·92	25 11 39·0	14·97
20	15 30 25·92	23 0 48·0	69·25	20	17 38 14·28	25 10 9·2	16·66
21	15 33 5·77	23 7 43·5	67·51	21	17 40 50·36	25 8 29·2	18·34
22	15 35 45·76	23 14 28·6	65·76	22	17 43 26·14	25 6 39·2	20·01
23	15 38 25·87	S. 23 21 3·2	64·00	23	17 46 1·62	S. 25 4 39·1	21·67
	FRIDAY 26.				*SUNDAY 28.*		
0	15 41 6·10	S. 23 27 27·2	62·23	0	17 48 36·80	S. 25 2 29·1	23·31
1	15 43 46·44	23 33 40·6	60·45	1	17 51 11·66	25 0 9·2	24·95
2	15 46 26·87	23 39 43·3	58·68	2	17 53 46·20	24 57 39·5	26·57
3	15 49 7·40	23 45 35·4	56·89	3	17 56 20·41	24 55 0·1	28·18
4	15 51 48·01	23 51 16·7	55·09	4	17 58 54·29	24 52 11·0	29·78
5	15 54 28·69	23 56 47·3	53·29	5	18 1 27·83	24 49 12·3	31·37
6	15 57 9·44	24 2 7·0	51·49	6	18 4 1·03	24 46 4·1	32·94
7	15 59 50·24	24 7 15·9	49·68	7	18 6 33·87	24 42 46·4	34·51
8	16 2 31·09	24 12 14·0	47·86	8	18 9 6·35	24 39 19·4	36·06
9	16 5 11·98	24 17 1·2	46·05	9	18 11 38·47	24 35 43·0	37·60
10	16 7 52·89	24 21 37·5	44·23	10	18 14 10·22	24 31 57·4	39·12
11	16 10 33·83	24 26 2·8	42·40	11	18 16 41·60	24 28 2·6	40·63
12	16 13 14·78	24 30 17·2	40·57	12	18 19 12·59	24 23 58·8	42·13
13	16 15 55·73	24 34 20·6	38·74	13	18 21 43·20	24 19 46·0	43·62
14	16 18 36·67	24 38 13·1	36·91	14	18 24 13·42	24 15 24·3	45·09
15	16 21 17·59	24 41 54·5	35·08	15	18 26 43·25	24 10 53·8	46·55
16	16 23 58·49	24 45 25·0	33·25	16	18 29 12·68	24 6 14·5	47·99
17	16 26 39·34	24 48 44·5	31·42	17	18 31 41·71	24 1 26·5	49·42
18	16 29 20·15	24 51 53·0	29·58	18	18 34 10·33	23 56 30·0	50·83
19	16 32 0·91	24 54 50·5	27·75	19	18 36 38·55	23 51 25·1	52·23
20	16 34 41·60	24 57 37·1	25·92	20	18 39 6·36	23 46 11·7	53·62
21	16 37 22·21	25 0 12·6	24·09	21	18 41 33·75	23 40 50·0	54·99
22	16 40 2·74	25 2 37·2	22·27	22	18 44 0·72	23 35 20·1	56·35
23	16 42 43·17	25 4 50·8	20·43	23	18 46 27·27	23 29 42·0	57·69
24	16 45 23·51	S. 25 6 53·4		24	18 48 53·39	S. 23 23 55·9	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 29.				*TUESDAY* 30.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	18 48 53·39	S. 23 23 55·9	59·01	0	19 45 8·89	S. 20 29 3·9	86·44
1	18 51 19·09	23 18 1·8	60·32	1	19 47 24·00	20 20 25·3	87·40
2	18 53 44·36	23 11 59·9	61·62	2	19 49 38·67	20 11 40·9	88·34
3	18 56 9·19	23 5 50·2	62·91	3	19 51 52·91	20 2 50·8	89·27
4	18 58 33·60	22 59 32·7	64·17	4	19 54 6·71	19 53 55·2	90·19
5	19 0 57·56	22 53 7·7	65·43	5	19 56 20·08	19 44 54·0	91·10
6	19 3 21·09	22 46 35·1	66·67	6	19 58 33·01	19 35 47·4	91·98
7	19 5 44·19	22 39 55·1	67·89	7	20 0 45·52	19 26 35·5	92·86
8	19 8 6·84	22 33 7·8	69·10	8	20 2 57·60	19 17 18·4	93·72
9	19 10 29·05	22 26 13·2	70·29	9	20 5 9·25	19 7 56·0	94·57
10	19 12 50·82	22 19 11·4	71·47	10	20 7 20·48	18 58 28·6	95·40
11	19 15 12·14	22 12 2·6	72·64	11	20 9 31·28	18 48 56·2	96·22
12	19 17 33·02	22 4 46·7	73·79	12	20 11 41·67	18 39 18·9	97·04
13	19 19 53·45	21 57 24·0	74·92	13	20 13 51·64	18 29 36·7	97·83
14	19 22 13·44	21 49 54·4	76·04	14	20 16 1·19	18 19 49·7	98·61
15	19 24 32·99	21 42 18·1	77·15	15	20 18 10·33	18 9 58·0	99·38
16	19 26 52·09	21 34 35·2	78·24	16	20 20 19·07	18 0 1·7	100·14
17	19 29 10·74	21 26 45·8	79·32	17	20 22 27·40	17 50 0·9	100·88
18	19 31 28·95	21 18 49·9	80·38	18	20 24 35·32	17 39 55·6	101·61
19	19 33 46·71	21 10 47·6	81·42	19	20 26 42·84	17 29 46·0	102·33
20	19 36 4·03	21 2 39·1	82·45	20	20 28 49·97	17 19 32·0	103·03
21	19 38 20·91	20 54 24·4	83·47	21	20 30 56·70	17 9 13·8	103·72
22	19 40 37·35	20 46 3·5	84·47	22	20 33 3·04	16 58 51·5	104·40
23	19 42 53·34	20 37 36·7	85·47	23	20 35 8·99	16 48 25·1	105·07
24	19 45 8·89	S. 20 29 3·9		24	20 37 14·55	S. 16 37 54·7	

PHASES OF THE MOON.

		d h m
☾	*Last Quarter* - - - - - - - - -	1 18 23·9
●	New Moon - - - - - - - - - -	9 18 56·1
☽	*First Quarter* - - - - - - - - -	17 18 45·3
○	Full Moon - - - - - - - - - -	24 10 23·0

		d h
☾	Apogee - - - - - - - - - - - - -	9 15
☾	Perigee - - - - - - - - - - - - -	23 23

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LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		*Noon.*	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Spica	W.	70 24 0	2530	72 4 31	2547	73 44 39	2565	75 24 22	2581
	Antares	W.	24 40 42	2530	26 21 14	2546	28 1 23	2562	29 41 10	2579
	Fomalhaut	E.	61 12 51	3083	59 44 21	3120	58 16 36	3159	56 49 38	3199
	Sun	E.	99 23 36	2873	97 50 42	2891	96 18 12	2910	94 46 6	2928
2	Spica	W.	83 37 23	2662	85 14 54	2677	86 52 5	2693	88 28 54	2708
	Antares	W.	37 54 30	2658	39 32 6	2674	41 9 21	2689	42 46 15	2704
	Fomalhaut	E.	49 47 27	3434	48 25 49	3490	47 5 14	3550	45 45 45	3614
	Sun	E.	87 11 12	3016	85 41 19	3032	84 11 46	3049	82 42 34	3065
3	Spica	W.	96 28 12	2779	98 3 8	2792	99 37 47	2804	101 12 10	2817
	Antares	W.	50 45 59	2774	52 21 1	2787	53 55 46	2800	55 30 14	2812
	Sun	E.	75 21 27	3143	73 54 9	3158	72 27 9	3172	71 0 26	3185
4	Antares	W.	63 18 39	2870	64 51 36	2881	66 24 19	2891	67 56 49	2901
	Sun	E.	63 50 51	3251	62 25 42	3263	61 0 47	3274	59 36 5	3286
5	Antares	W.	75 36 19	2946	77 7 40	2954	78 38 50	2962	80 9 51	2970
	Sun	E.	52 35 51	3339	51 12 24	3349	49 49 9	3358	48 26 5	3367
6	Antares	W.	87 42 41	3002	89 12 51	3007	90 42 55	3013	92 12 51	3018
	α Aquilæ	W.	42 14 34	4440	43 19 19	4367	44 25 10	4301	45 32 2	4240
	Sun	E.	41 33 20	3412	40 11 17	3420	38 49 23	3429	37 27 39	3437
7	Antares	W.	99 41 2	3041	101 10 24	3045	102 39 41	3048	104 8 55	3052
	α Aquilæ	W.	51 19 0	4011	52 30 29	3976	53 42 32	3944	54 55 7	3916
	Sun	E.	30 41 24	3481	29 20 39	3492	28 0 6	3502	26 39 44	3514
12	Sun	W.	24 29 22	3508	25 49 37	3495	27 10 7	3484	28 30 49	3473
	Pollux	E.	64 19 54	3082	62 51 22	3079	61 22 47	3077	59 54 9	3074
	Jupiter	E.	90 14 38	3049	88 45 26	3046	87 16 10	3042	85 46 49	3038
	Regulus	E.	101 9 52	3051	99 40 42	3047	98 11 27	3043	96 42 7	3039
	Saturn	E.	106 12 12	3049	104 43 0	3045	103 13 43	3041	101 44 21	3037
13	Sun	W.	35 17 14	3424	36 39 3	3416	38 1 2	3407	39 23 11	3397
	Pollux	E.	52 30 3	3059	51 1 3	3055	49 31 58	3052	48 2 50	3049
	Jupiter	E.	78 18 46	3014	76 48 51	3010	75 18 51	3004	73 48 43	2998
	Regulus	E.	89 14 6	3015	87 44 12	3009	86 14 10	3004	84 44 2	2997
	Saturn	E.	94 16 8	3013	92 46 11	3007	91 16 7	3002	89 45 56	2996
14	Sun	W.	46 16 34	3351	47 39 47	3341	49 3 11	3331	50 26 47	3321
	Pollux	E.	40 36 11	3034	39 6 40	3033	37 37 8	3030	36 7 32	3029
	Jupiter	E.	66 16 11	2966	64 45 15	2959	63 14 11	2951	61 42 57	2943
	Regulus	E.	77 11 20	2963	75 40 21	2957	74 9 14	2948	72 37 56	2940
	Saturn	E.	82 13 3	2962	80 42 3	2955	79 10 54	2947	77 39 35	2939
15	Sun	W.	57 27 46	3267	58 52 36	3255	60 17 40	3242	61 42 59	3231
	Aldebaran	W.	16 50 23	3509	18 10 37	3403	19 32 50	3317	20 56 42	3247
	Mars	W.	14 53 16	3169	16 20 2	3151	17 47 10	3134	19 14 39	3118
	Jupiter	E.	54 4 11	2901	52 31 53	2891	50 59 22	2882	49 26 40	2871
	Regulus	E.	64 58 48	2895	63 26 23	2886	61 53 47	2876	60 20 57	2866
	Saturn	E.	70 0 23	2896	68 27 59	2886	66 55 22	2877	65 22 33	2867
	Spica	E.	119 1 50	2892	117 29 21	2881	115 56 38	2871	114 23 42	2860
16	Sun	W.	68 53 14	3165	70 20 5	3152	71 47 12	3137	73 14 37	3123
	Aldebaran	W.	28 13 17	3015	29 43 11	2982	31 13 46	2951	32 45 0	2923

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Day of the Month.	Star's Name and Position.		*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Spica	W.	77 3 43	2597	78 42 42	2615	80 21 17	2630	81 59 31	2646
	Antares	W.	31 20 34	2595	32 59 36	2611	34 38 16	2627	36 16 34	2643
	Fomalhaut	E.	55 23 28	3241	53 58 7	3286	52 33 39	3332	51 10 4	3382
	Sun	E.	93 14 22	2946	91 43 2	2963	90 12 3	2981	88 41 27	2998
2	Spica	W.	90 5 24	2723	91 41 34	2737	93 17 25	2750	94 52 58	2765
	Antares	W.	44 22 50	2719	45 59 5	2732	47 35 2	2747	49 10 39	2760
	Fomalhaut	E.	44 27 26	3682	43 10 20	3757	41 54 33	3838	40 40 10	3924
	Sun	E.	81 13 42	3082	79 45 10	3097	78 16 57	3113	76 49 3	3128
3	Spica	W.	102 46 15	2829	104 20 5	2841	105 53 39	2853	107 26 58	2865
	Antares	W.	57 4 26	2825	58 38 22	2837	60 12 2	2848	61 45 28	2859
	Sun	E.	69 33 59	3199	68 7 49	3212	66 41 54	3225	65 16 15	3238
4	Antares	W.	69 29 7	2911	71 1 12	2920	72 33 6	2929	74 4 48	2938
	Sun	E.	58 11 37	3297	56 47 22	3307	55 23 19	3319	53 59 29	3329
5	Antares	W.	81 40 42	2977	83 11 24	2983	84 41 58	2989	86 12 24	2996
	Sun	E.	47 3 11	3377	45 40 28	3386	44 17 55	3394	42 55 32	3404
6	Antares	W.	93 42 41	3024	95 12 24	3028	96 42 2	3033	98 11 34	3036
	α Aquilæ	W.	46 39 50	4185	47 48 30	4135	48 57 58	4090	50 8 9	4049
	Sun	E.	36 6 4	3446	34 44 39	3454	33 23 24	3463	32 2 19	3472
7	Antares	W.	105 38 4	3055	107 7 9	3057	108 36 11	3060	110 5 10	3063
	α Aquilæ	W.	56 8 11	3889	57 21 42	3864	58 35 39	3841	59 49 59	3820
	Sun	E.	25 19 35	3526	23 59 39	3540	22 39 59	3556	21 20 36	3574
12	Sun	W.	29 51 43	3462	31 12 50	3453	32 34 7	3443	33 55 35	3433
	Pollux	E.	58 25 27	3070	56 56 41	3068	55 27 52	3065	53 59 0	3061
	Jupiter	E.	84 17 23	3034	82 47 52	3030	81 18 16	3025	79 48 34	3020
	Regulus	E.	95 12 43	3034	93 43 12	3030	92 13 36	3025	90 43 54	3020
	Saturn	E.	100 14 54	3032	98 45 21	3028	97 15 43	3023	95 45 59	3018
13	Sun	W.	40 45 31	3388	42 8 1	3379	43 30 42	3370	44 53 33	3361
	Pollux	E.	46 33 38	3045	45 4 21	3043	43 35 1	3040	42 5 38	3037
	Jupiter	E.	72 18 28	2993	70 48 6	2986	69 17 36	2980	67 46 58	2973
	Regulus	E.	83 13 45	2992	81 43 22	2984	80 12 49	2978	78 42 9	2971
	Saturn	E.	88 15 38	2989	86 45 11	2983	85 14 37	2976	83 43 54	2969
14	Sun	W.	51 50 34	3311	53 14 33	3300	54 38 45	3289	56 3 9	3278
	Pollux	E.	34 37 55	3029	33 8 18	3029	31 38 41	3030	30 9 6	3033
	Jupiter	E.	60 11 33	2935	58 39 59	2927	57 8 14	2918	55 36 18	2909
	Regulus	E.	71 6 28	2932	69 34 50	2923	68 3 1	2914	66 31 0	2905
	Saturn	E.	76 8 6	2931	74 36 26	2923	73 4 36	2914	71 32 35	2905
15	Sun	W.	63 8 31	3218	64 34 19	3206	66 0 21	3192	67 26 40	3179
	Aldebaran	W.	22 21 55	3187	23 48 20	3136	25 15 46	3091	26 44 7	3051
	Mars ●	W.	20 42 27	3103	22 10 33	3087	23 38 58	3073	25 7 41	3058
	Jupiter	E.	47 53 44	2862	46 20 36	2851	44 47 14	2840	43 13 38	2830
	Regulus	E.	58 47 54	2855	57 14 37	2845	55 41 7	2833	54 7 22	2821
	Saturn	E.	63 49 32	2856	62 16 17	2845	60 42 48	2835	59 9 6	2824
	Spica	E.	112 50 32	2849	111 17 7	2838	109 43 28	2825	108 9 33	2814
16	Sun	W.	74 42 19	3107	76 10 20	3092	77 38 39	3077	79 7 17	3061
	Aldebaran	W.	34 16 49	2898	35 49 11	2872	37 22 6	2848	38 55 32	2824

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
16	Mars	W.	26 36 42	3043	28 6 2	3029	29 35 39	3014	31 5 35	2998
	Jupiter	E.	41 39 49	2819	40 5 46	2808	38 31 28	2796	36 56 55	2785
	Regulus	E.	52 33 22	2810	50 59 7	2798	49 24 37	2786	47 49 51	2774
	Saturn	E.	57 35 10	2813	56 0 59	2802	54 26 33	2790	52 51 52	2779
	Spica	E.	106 35 23	2802	105 0 57	2789	103 26 14	2776	101 51 15	2762
17	Sun	W.	80 36 14	3046	82 5 30	3029	83 35 7	3012	85 5 5	2996
	Aldebaran	W.	40 29 28	2802	42 3 54	2781	43 38 47	2759	45 14 9	2738
	Mars	W.	38 40 1	2920	40 11 54	2905	41 44 7	2888	43 16 41	2871
	Jupiter	E.	29 0 30	2729	27 24 29	2719	25 48 14	2710	24 11 47	2701
	Regulus	E.	39 51 53	2710	38 15 27	2697	36 38 43	2683	35 1 41	2670
	Saturn	E.	44 54 34	2719	43 18 19	2706	41 41 47	2694	40 4 59	2682
	Spica	E.	93 51 47	2692	92 14 56	2677	90 37 46	2662	89 0 15	2646
18	Sun	W.	92 40 11	2909	94 12 19	2891	95 44 49	2873	97 17 43	2855
	Aldebaran	W.	53 17 51	2637	54 55 56	2618	56 34 27	2597	58 13 26	2578
	Mars	W.	51 5 0	2785	52 39 47	2768	54 14 57	2750	55 50 31	2732
	Regulus	E.	26 52 14	2610	25 13 32	2600	23 34 37	2591	21 55 29	2584
	Saturn	E.	31 57 6	2628	30 18 49	2620	28 40 21	2613	27 1 43	2607
	Spica	E.	80 47 22	2567	79 7 42	2550	77 27 38	2534	75 47 12	2517
19	Sun	W.	105 8 7	2763	106 43 24	2744	108 19 6	2726	109 55 11	2707
	Aldebaran	W.	66 34 57	2482	68 16 35	2464	69 58 39	2445	71 41 10	2426
	Mars	W.	63 54 24	2640	65 32 24	2621	67 10 50	2604	68 49 40	2585
	Pollux	W.	24 53 15	2604	26 32 4	2566	28 11 45	2532	29 52 13	2500
	Spica	E.	67 19 3	2431	65 36 13	2414	63 52 58	2397	62 9 19	2380
	Antares	E.	112 59 29	2426	111 16 31	2408	109 33 8	2391	107 49 20	2373
20	Sun	W.	118 1 49	2616	119 40 22	2599	121 19 19	2582	122 58 38	2565
	Aldebaran	W.	80 20 15	2336	82 5 22	2319	83 50 53	2302	85 36 50	2285
	Mars	W.	77 10 12	2494	78 51 34	2476	80 33 21	2459	82 15 32	2441
	Pollux	W.	38 24 49	2368	40 9 9	2346	41 54 2	2324	43 39 26	2303
	Spica	E.	53 24 52	2295	51 38 45	2279	49 52 14	2263	48 5 20	2246
	Antares	E.	99 4 3	2287	97 17 45	2270	95 31 1	2253	93 43 53	2237
21	Aldebaran	W.	94 32 31	2207	96 20 48	2193	98 9 26	2179	99 58 25	2166
	Mars	W.	90 52 32	2359	92 37 6	2344	94 22 2	2328	96 7 20	2314
	Pollux	W.	52 33 50	2208	54 22 5	2192	56 10 45	2175	57 59 50	2160
	Jupiter	W.	26 13 15	2207	28 1 32	2187	29 50 19	2169	31 39 33	2153
	Regulus	W.	15 36 44	2277	17 23 17	2241	19 10 44	2209	20 58 58	2183
	Saturn	W.	11 42 5	2627	13 20 23	2500	15 1 37	2408	16 45 0	2339
	Spica	E.	39 5 2	2173	37 15 54	2159	35 26 25	2147	33 36 37	2134
	Antares	E.	84 42 13	2159	82 52 43	2144	81 2 51	2130	79 12 37	2116
22	Mars	W.	104 58 53	2249	106 46 8	2238	108 33 39	2227	110 21 26	2218
	Pollux	W.	67 10 50	2091	69 2 3	2079	70 53 34	2068	72 45 22	2058
	Jupiter	W.	40 51 40	2081	42 43 9	2069	44 34 56	2057	46 27 1	2047
	Regulus	W.	30 8 39	2088	31 59 56	2074	33 51 35	2061	35 43 34	2049
	Saturn	W.	25 41 14	2149	27 30 58	2126	29 21 17	2107	31 12 6	2089
	Spica	E.	24 23 29	2090	22 32 14	2085	20 40 52	2083	18 49 27	2085
	Antares	E.	69 56 25	2055	68 4 16	2043	66 11 49	2033	64 19 7	2024
23	Pollux	W.	82 7 55	2019	84 1 0	2013	85 54 14	2008	87 47 35	2004

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
16	Mars W.	32 35 50	2984	34 6 23	2968	35 37 16	2952	37 8 29	2937
	Jupiter E.	35 22 8	2773	33 47 5	2763	32 11 48	2751	30 36 16	2741
	Regulus E.	46 14 49	2761	44 39 30	2749	43 3 55	2736	41 28 3	2723
	Saturn E.	51 16 56	2767	49 41 45	2754	48 6 17	2743	46 30 34	2730
	Spica E.	100 15 57	2749	98 40 22	2735	97 4 29	2721	95 28 17	2707
17	Sun W.	86 35 23	2979	88 6 2	2962	89 37 3	2944	91 8 26	2927
	Aldebaran W.	46 49 59	2717	48 26 17	2697	50 3 1	2676	51 40 13	2657
	Mars W.	44 49 37	2855	46 22 54	2837	47 56 34	2821	49 30 35	2802
	Jupiter E.	22 35 8	2693	20 58 19	2687	19 21 22	2685	17 44 22	2685
	Regulus E.	33 24 21	2658	31 46 45	2645	30 8 51	2632	28 30 40	2621
	Saturn E.	38 27 55	2670	36 50 35	2659	35 13 0	2648	33 35 10	2638
	Spica E.	87 22 23	2631	85 44 11	2615	84 5 36	2600	82 26 41	2583
18	Sun W.	98 51 0	2836	100 24 41	2818	101 58 45	2799	103 33 14	2781
	Aldebaran W.	59 52 51	2559	61 32 43	2540	63 13 1	2520	64 53 46	2502
	Mars W.	57 26 29	2714	59 2 51	2695	60 39 38	2677	62 16 49	2659
	Regulus E.	20 16 12	2580	18 36 50	2579	16 57 27	2583	15 18 8	2597
	Saturn E.	25 22 57	2604	23 44 7	2604	22 5 18	2609	20 26 35	2619
	Spica E.	74 6 22	2500	72 25 8	2483	70 43 31	2465	69 1 29	2448
19	Sun W.	111 31 42	2689	113 8 37	2670	114 45 57	2652	116 23 41	2635
	Aldebaran W.	73 24 7	2408	75 7 30	2390	76 51 19	2372	78 35 34	2354
	Mars W.	70 28 56	2566	72 8 37	2548	73 48 44	2530	75 29 15	2512
	Pollux W.	31 33 26	2471	33 15 20	2443	34 57 53	2417	36 41 3	2392
	Spica E.	60 25 15	2362	58 40 46	2346	56 55 53	2328	55 10 35	2311
	Antares E.	106 5 7	2356	104 20 29	2339	102 35 26	2321	100 49 57	2304
20	Sun W.	124 38 21	2548	126 18 28	2532	127 58 56	2516	129 39 47	2501
	Aldebaran W.	87 23 11	2269	89 9 56	2253	90 57 5	2237	92 44 37	2222
	Mars W.	83 58 8	2424	85 41 8	2407	87 24 33	2391	89 8 21	2375
	Pollux W.	45 25 21	2283	47 11 46	2263	48 58 40	2245	50 46 1	2226
	Spica E.	46 18 1	2231	44 30 20	2216	42 42 16	2201	40 53 50	2186
	Antares E.	91 56 21	2221	90 8 24	2205	88 20 4	2189	86 31 20	2174
21	Aldebaran W.	101 47 44	2153	103 37 23	2141	105 27 19	2130	107 17 33	2118
	Mars W.	97 52 59	2300	99 38 58	2286	101 25 18	2274	103 11 56	2261
	Pollux W.	59 49 18	2145	61 39 9	2130	63 29 22	2116	65 19 56	2103
	Jupiter W.	33 29 12	2137	35 19 15	2121	37 9 42	2107	39 0 31	2094
	Regulus W.	22 47 51	2160	24 37 19	2140	26 27 18	2121	28 17 45	2104
	Saturn W.	18 30 3	2285	20 16 24	2241	22 3 50	2206	23 52 9	2175
	Spica E.	31 46 30	2124	29 56 7	2113	28 5 28	2104	26 14 35	2096
	Antares E.	77 22 2	2103	75 31 7	2090	73 39 52	2077	71 48 18	2065
22	Mars W.	112 9 27	2208	113 57 43	2200	115 46 11	2192	117 34 51	2184
	Pollux W.	74 37 25	2048	76 29 44	2040	78 22 15	2032	80 14 59	2025
	Jupiter W.	48 19 21	2037	50 11 57	2028	52 4 47	2021	53 57 49	2013
	Regulus W.	37 35 52	2038	39 28 28	2028	41 21 18	2019	43 14 23	2010
	Saturn W.	33 3 23	2073	34 55 4	2059	36 47 6	2046	38 39 28	2036
	Spica E.	16 58 5	2091	15 6 52	2104	13 15 59	2129	11 25 44	2173
	Antares E.	62 26 11	2015	60 33 0	2007	58 39 37	2000	56 46 2	1993
23	Pollux W.	89 41 3	2001	91 34 35	2000	93 28 10	1998	95 21 48	1997

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
23	Jupiter	W.	55 51 3	2007	57 44 27	2001	59 38 0	1996	61 31 40	1992
	Regulus	W.	45 7 41	2003	47 1 11	1997	48 54 50	1991	50 48 38	1986
	Saturn	W.	40 32 6	2026	42 25 0	2017	44 18 8	2010	46 11 26	2003
	Antares	E.	54 52 17	1987	52 58 22	1982	51 4 19	1977	49 10 9	1973
	α Aquilæ	E.	107 19 12	2582	105 39 52	2565	104 0 9	2551	102 20 7	2539
24	Pollux	W.	97 15 27	1998	99 9 4	1999	101 2 40	2001	102 56 12	2005
	Jupiter	W.	71 1 14	1983	72 55 15	1985	74 49 13	1986	76 43 9	1989
	Regulus	W.	60 19 1	1976	62 13 13	1977	64 7 24	1978	66 1 32	1980
	Saturn	W.	55 39 53	1988	57 33 47	1988	59 27 40	1989	61 21 32	1990
	Antares	E.	39 38 17	1967	37 43 51	1968	35 49 27	1970	33 55 6	1974
	α Aquilæ	E.	93 56 37	2507	92 15 34	2506	90 34 30	2508	88 53 28	2511
25	Jupiter	W.	86 11 24	2013	88 4 38	2021	89 57 40	2029	91 50 29	2038
	Regulus	W.	75 30 58	2003	77 24 27	2011	79 17 44	2019	81 10 49	2027
	Saturn	W.	70 49 47	2012	72 43 3	2018	74 36 9	2026	76 29 3	2035
	Spica	W.	21 31 35	2033	23 24 17	2035	25 16 56	2039	27 9 30	2044
	Antares	E.	24 25 2	2002	22 31 31	2010	20 38 13	2021	18 45 11	2032
	α Aquilæ	E.	80 30 15	2555	78 50 18	2569	77 10 41	2586	75 31 27	2605
	Fomalhaut	E.	105 32 43	2440	103 50 6	2441	102 7 30	2443	100 24 57	2446
26	Jupiter	W.	101 10 48	2092	103 1 59	2105	104 52 50	2118	106 43 21	2133
	Regulus	W.	90 32 34	2081	92 24 3	2094	94 15 12	2106	96 6 2	2120
	Saturn	W.	85 49 52	2087	87 41 11	2100	89 32 11	2113	91 22 50	2127
	Spica	W.	36 29 43	2087	38 21 3	2098	40 12 5	2110	42 2 49	2123
	α Aquilæ	E.	67 22 32	2729	65 46 31	2762	64 11 13	2797	62 36 41	2834
	Fomalhaut	E.	91 54 8	2487	90 12 37	2499	88 31 23	2514	86 50 29	2529
	α Pegasi	E.	113 2 19	2243	111 14 55	2252	109 27 44	2261	107 40 47	2271
27	Regulus	W.	105 14 37	2197	107 3 9	2214	108 51 16	2231	110 38 58	2249
	Saturn	W.	100 30 34	2204	102 18 55	2221	104 6 51	2238	105 54 22	2256
	Spica	W.	51 11 15	2196	52 59 49	2212	54 47 59	2229	56 35 44	2246
	α Aquilæ	E.	54 57 22	3071	53 28 37	3130	52 1 4	3194	50 34 48	3263
	Fomalhaut	E.	78 31 53	2626	76 53 33	2648	75 15 43	2673	73 38 27	2699
	α Pegasi	E.	98 50 15	2336	97 5 8	2351	95 20 23	2368	93 36 2	2384
28	Saturn	W.	114 45 13	2350	116 30 0	2369	118 14 20	2389	119 58 11	2408
	Spica	W.	65 28 5	2335	67 13 14	2353	68 57 57	2371	70 42 13	2390
	Antares	W.	19 46 27	2338	21 31 31	2355	23 16 10	2373	25 0 24	2391
	Fomalhaut	E.	65 41 13	2848	64 7 47	2882	62 35 5	2919	61 3 10	2956
	α Pegasi	E.	85 0 26	2475	83 18 38	2495	81 37 17	2515	79 56 25	2535
	Sun	E.	130 42 35	2665	129 5 8	2683	127 28 6	2702	125 51 29	2722
29	Spica	W.	79 16 48	2485	80 58 23	2503	82 39 32	2522	84 20 14	2541
	Antares	W.	33 35 4	2482	35 16 42	2501	36 57 54	2520	38 38 39	2538
	Fomalhaut	E.	53 36 10	3177	52 9 33	3229	50 43 58	3284	49 19 28	3343
	α Pegasi	E.	71 39 16	2643	70 1 19	2666	68 23 53	2688	66 46 57	2711
	Sun	E.	117 54 53	2820	116 20 51	2840	114 47 15	2860	113 14 5	2880
30	Spica	W.	92 37 21	2633	94 15 31	2650	95 53 18	2668	97 30 41	2685
	Antares	W.	46 56 7	2629	48 34 23	2647	50 12 14	2664	51 49 42	2681
	Fomalhaut	E.	42 35 14	3706	41 18 33	3797	40 3 28	3896	38 50 4	4004
	α Pegasi	E.	58 50 6	2832	57 16 20	2858	55 43 7	2884	54 10 27	2910
	Sun	E.	105 34 29	2977	104 3 47	2996	102 33 29	3014	101 3 34	3033

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
23	Jupiter W.	63 25 27	1988	65 19 20	1986	67 13 16	1985	69 7 14	1984
	Regulus W.	52 42 34	1983	54 36 35	1980	56 30 41	1978	58 24 50	1977
	Saturn W.	48 4 55	1999	49 58 31	1995	51 52 14	1991	53 46 2	1989
	Antares E.	47 15 53	1970	45 21 32	1969	43 27 9	1967	41 32 43	1967
	α Aquilæ E.	100 39 48	2529	98 59 15	2520	97 18 30	2514	95 37 36	2510
24	Pollux W.	104 49 39	2008	106 43 1	2014	108 36 14	2019	110 29 19	2026
	Jupiter W.	78 37 1	1992	80 30 48	1996	82 24 28	2001	84 18 1	2007
	Regulus W.	67 55 38	1984	69 49 38	1987	71 43 32	1992	73 37 20	1998
	Saturn W.	63 15 22	1993	65 9 8	1996	67 2 48	2001	68 56 21	2006
	Antares E.	32 0 51	1977	30 6 41	1982	28 12 38	1988	26 18 45	1995
	α Aquilæ E.	87 12 30	2516	85 31 39	2523	83 50 58	2532	82 10 29	2543
25	Jupiter W.	93 43 4	2047	95 35 25	2057	97 27 30	2068	99 19 18	2080
	Regulus W.	83 3 41	2036	84 56 19	2046	86 48 41	2057	88 40 46	2068
	Saturn W.	78 21 43	2043	80 14 10	2054	82 6 20	2064	83 58 15	2075
	Spica W.	29 1 56	2050	30 54 12	2058	32 46 16	2066	34 38 7	2076
	Antares E.	16 52 26	2045	15 0 1	2060	13 8 0	2078	11 16 27	2101
	α Aquilæ E.	73 52 39	2625	72 14 18	2648	70 36 28	2673	68 59 12	2700
	Fomalhaut E.	98 42 28	2451	97 0 6	2458	95 17 54	2467	93 35 54	2477
26	Jupiter W.	108 33 30	2147	110 23 17	2163	112 12 41	2179	114 1 41	2194
	Regulus W.	97 56 30	2135	99 46 36	2149	101 36 20	2164	103 25 41	2181
	Saturn W.	93 13 8	2141	95 3 4	2157	96 52 37	2172	98 41 47	2187
	Spica W.	43 53 13	2137	45 43 16	2151	47 32 58	2165	49 22 18	2180
	α Aquilæ E.	61 2 57	2875	59 30 6	2918	57 58 10	2966	56 27 14	3017
	Fomalhaut E.	85 9 56	2546	83 29 47	2564	81 50 2	2583	80 10 44	2603
	α Pegasi E.	105 54 4	2283	104 7 39	2295	102 21 32	2307	100 35 43	2321
27	Regulus W.	112 26 13	2266	114 13 2	2284	115 59 25	2304	117 45 19	2322
	Saturn W.	107 41 26	2274	109 28 3	2292	111 14 14	2311	112 59 57	2330
	Spica W.	58 23 3	2263	60 9 58	2281	61 56 26	2298	63 42 29	2316
	α Aquilæ E.	49 9 53	3338	47 46 26	3419	46 24 31	3508	45 4 16	3604
	Fomalhaut E.	72 1 45	2726	70 25 39	2754	68 50 11	2783	67 15 21	2815
	α Pegasi E.	91 52 4	2401	90 8 31	2419	88 25 23	2437	86 42 41	2456
28	Saturn W.	121 41 34	2428	123 24 29	2449	125 6 54	2469	126 48 51	2489
	Spica W.	72 26 2	2409	74 9 24	2428	75 52 19	2447	77 34 47	2466
	Antares W.	26 44 12	2409	28 27 34	2427	30 10 31	2446	31 53 1	2465
	Fomalhaut E.	59 32 2	2996	58 1 44	3038	56 32 18	3081	55 3 45	3128
	α Pegasi E.	78 16 1	2556	76 36 5	2577	74 56 39	2599	73 17 43	2621
	Sun E.	124 15 18	2741	122 39 33	2761	121 4 14	2780	119 29 20	2801
29	Spica W.	86 0 30	2559	87 40 21	2578	89 19 46	2596	90 58 46	2615
	Antares W.	40 18 59	2556	41 58 54	2575	43 38 23	2593	45 17 27	2611
	Fomalhaut E.	47 56 6	3405	46 33 55	3472	45 13 0	3544	43 53 25	3622
	α Pegasi E.	65 10 32	2735	63 34 38	2759	61 59 16	2782	60 24 25	2807
	Sun E.	111 41 20	2899	110 9 0	2919	108 37 5	2939	107 5 35	2958
30	Spica W.	99 7 41	2703	100 44 17	2719	102 20 32	2736	103 56 24	2752
	Antares W.	53 26 47	2698	55 3 30	2715	56 39 50	2731	58 15 48	2747
	Fomalhaut E.	37 38 29	4123	36 28 50	4255	35 21 16	4401	34 15 56	4564
	α Pegasi E.	52 38 21	2937	51 6 49	2965	49 35 52	2994	48 5 32	3023
	Sun E.	99 34 2	3051	98 4 52	3069	96 36 4	3087	95 7 38	3104

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Day of the Month.	Airy's Day Numbers—For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of E	F	G	H	Value of L
1	0·82419	1·31521	0·24612	1·33214	107·354
2	0·82880	1·30794	0·24663	1·33247	107·610
3	0·83369	1·30060	0·24714	1·33281	107·854
4	0·83885	1·29316	0·24765	1·33316	108·091
5	0·84430	1·28563	0·24817	1·33351	108·318
6	0·84999	1·27800	0·24869	1·33388	108·534
7	0·85593	1·27028	0·24922	1·33426	108·742
8	0·86211	1·26247	0·24975	1·33465	108·940
9	0·86851	1·25457	0·25028	1·33505	109·129
10	0·87511	1·24658	0·25081	1·33546	109·308
11	0·88189	1·23850	0·25134	1·33589	109·476
12	0·88884	1·23033	0·25189	1·33632	109·634
13	0·89595	1·22207	0·25244	1·33676	109·781
14	0·90322	1·21372	0·25300	1·33720	109·919
15	0·91062	1·20528	0·25356	1·33766	110·046
16	0·91816	1·19674	0·25412	1·33812	110·163
17	0·92583	1·18812	0·25469	1·33859	110·270
18	0·93360	1·17942	0·25526	1·33906	110·367
19	0·94146	1·17062	0·25584	1·33953	110·455
20	0·94941	1·16174	0·25642	1·34001	110·532
21	0·95742	1·15277	0·25701	1·34050	110·599
22	0·96551	1·14370	0·25760	1·34099	110·655
23	0·97366	1·13455	0·25819	1·34149	110·702
24	0·98185	1·12532	0·25879	1·34199	110·737
25	0·99008	1·11600	0·25940	1·34249	110·762
26	0·99835	1·10660	0·26002	1·34300	110·777
27	1·00664	1·09711	0·26065	1·34351	110·781
28	1·01495	1·08755	0·26128	1·34403	110·774
29	1·02328	1·07791	0·26192	1·34455	110·758
30	1·03161	1·06819	0·26256	1·34507	110·731
31	1·03995	1·05841	0·26320	1·34559	110·694

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Day of the Month.	Bessel's Day Numbers— For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of A	B	C	D	Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0ᵈ·065193. Days.	From Mean Noon of January 1. Day of the Year.	Fraction of the Year.*
					h m s			
1	−1·2631	−0·6371	+9·7501	−0·5459	23 16 52·25	9	90	·2464
2	1·2615	0·6701	9·7517	0·5439	23 12 56·35	10	91	·2492
3	1·2596	0·7007	9·7533	0·5418	23 9 0·44	11	92	·2519
4	−1·2577	−0·7291	+9·7549	−0·5396	23 5 4·53	12	93	·2546
5	1·2556	0·7557	9·7565	0·5374	23 1 8·62	13	94	·2574
6	1·2534	0·7806	9·7581	0·5351	22 57 12·71	14	95	·2601
7	−1·2510	−0·8040	+9·7597	−0·5327	22 53 16·81	15	96	·2628
8	1·2485	0·8260	9·7614	0·5302	22 49 20·90	16	97	·2656
9	1·2458	0·8469	9·7630	0·5276	22 45 24·99	17	98	·2683
10	−1·2430	−0·8667	+9·7646	−0·5250	22 41 29·08	18	99	·2711
11	1·2400	0·8855	9·7663	0·5223	22 37 33·18	19	100	·2738
12	1·2370	0·9033	9·7679	0·5195	22 33 37·27	20	101	·2765
13	−1·2338	−0·9204	+9·7696	−0·5166	22 29 41·36	21	102	·2793
14	1·2304	0·9366	9·7713	0·5137	22 25 45·45	22	103	·2820
15	1·2269	0·9522	9·7730	0·5106	22 21 49·54	23	104	·2847
16	−1·2232	−0·9671	+9·7747	−0·5076	22 17 53·64	24	105	·2875
17	1·2193	0·9813	9·7764	0·5044	22 13 57·73	25	106	·2902
18	1·2153	0·9950	9·7781	0·5011	22 10 1·82	26	107	·2930
19	−1·2112	−1·0081	+9·7798	−0·4978	22 6 5·91	27	108	·2957
20	1·2068	1·0207	9·7816	0·4945	22 2 10·00	28	109	·2984
21	1·2023	1·0328	9·7833	0·4910	21 58 14·09	29	110	·3012
22	−1·1977	−1·0445	+9·7851	−0·4875	21 54 18·19	30	111	·3039
23	1·1928	1·0557	9·7869	0·4839	21 50 22·28	31	112	·3066
24	1·1878	1·0665	9·7887	0·4803	21 46 26·37	32	113	·3094
25	−1·1826	−1·0770	+9·7905	−0·4766	21 42 30·46	33	114	·3121
26	1·1772	1·0870	9·7923	0·4728	21 38 34·55	34	115	·3149
27	1·1716	1·0967	9·7941	0·4690	21 34 38·64	35	116	·3176
28	−1·1658	−1·1061	+9·7959	−0·4651	21 30 42·73	36	117	·3203
29	1·1599	* 1·1151	9·7978	0·4612	21 26 46·82	37	118	·3231
30	1·1536	1·1238	9·7996	0·4572	21 22 50·91	38	119	·3258
31	−1·1473	−1·1323	+9·8015	−0·4532	21 18 55·01	39	120	·3285

* Add ·0031 if Fraction be required for the time t, see page 327.

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AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S *Apparent* Right Ascension.	Diff. for 1 hour.	THE SUN'S *Apparent* Declination.	Diff. for 1 hour.	Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, *to be subtracted from Apparent Time.*	Diff. for 1 hour.
		h m s	s	° ′ ″	″	m s	m s	s
Wed.	1	2 34 30·25	9·554	N.15 9 24·8	44·90	1 6·06	3 4·15	0·301
Thur.	2	2 38 19·55	9·578	15 27 22·4	44·27	1 6·14	3 11·38	0·278
Frid.	3	2 42 9·42	9·602	15 45 4·8	43·62	1 6·22	3 18·05	0·254
Sat.	4	2 45 59·87	9·626	16 2 31·7	42·96	1 6·30	3 24·14	0·230
Sun.	5	2 49 50·90	9·650	16 19 42·8	42·29	1 6·38	3 29·65	0·206
Mon.	6	2 53 42·50	9·674	16 36 37·7	41·60	1 6·46	3 34·59	0·182
Tues.	7	2 57 34·69	9·699	16 53 16·1	40·90	1 6·54	3 38·95	0·157
Wed.	8	3 1 27·46	9·723	17 9 37·6	40·18	1 6·62	3 42·72	0·133
Thur.	9	3 5 20·81	9·747	17 25 42·0	39·45	1 6·70	3 45·92	0·109
Frid.	10	3 9 14·74	9·771	17 41 28·9	38·71	1 6·79	3 48·54	0·085
Sat.	11	3 13 9·24	9·795	17 56 58·1	37·96	1 6·87	3 50·59	0·062
Sun.	12	3 17 4·32	9·819	18 12 9·2	37·20	1 6·95	3 52·07	0·038
Mon.	13	3 20 59·96	9·842	18 27 1·9	36·42	1 7·03	3 52·98	0·015
Tues.	14	3 24 56·16	9·865	18 41 36·0	35·63	1 7·11	3 53·33	0·008
Wed.	15	3 28 52·92	9·888	18 55 51·1	34·83	1 7·20	3 53·13	0·031
Thur.	16	3 32 50·22	9·911	19 9 47·1	34·02	1 7·28	3 52·38	0·054
Frid.	17	3 36 48·07	9·933	19 23 23·5	33·19	1 7·36	3 51·09	0·077
Sat.	18	3 40 46·47	9·956	19 36 40·2	32·36	1 7·44	3 49·26	0·099
Sun.	19	3 44 45·40	9·978	19 49 37·0	31·52	1 7·52	3 46·89	0·121
Mon.	20	3 48 44·88	10·000	20 2 13·5	30·67	1 7·60	3 43·98	0·143
Tues.	21	3 52 44·88	10·022	20 14 29·5	29·80	1 7·68	3 40·54	0·165
Wed.	22	3 56 45·40	10·044	20 26 24·8	28·93	1 7·75	3 36·59	0·187
Thur.	23	4 0 46·45	10·065	20 37 59·2	28·05	1 7·83	3 32·11	0·208
Frid.	24	4 4 48·01	10·086	20 49 12·4	27·16	1 7·90	3 27·12	0·229
Sat.	25	4 8 50·07	10·107	21 0 4·3	26·26	1 7·97	3 21·62	0·250
Sun.	26	4 12 52·64	10·128	21 10 34·5	25·35	1 8·04	3 15·63	0·270
Mon.	27	4 16 55·70	10·148	21 20 42·9	24·43	1 8·10	3 9·15	0·290
Tues.	28	4 20 59·25	10·168	21 30 29·2	23·51	1 8·17	3 2·18	0·310
Wed.	29	4 25 3·28	10·187	21 39 53·3	22·57	1 8·23	2 54·73	0·329
Thur.	30	4 29 7·77	10·206	21 48 54·9	21·62	1 8·29	2 46·81	0·348
Frid.	31	4 33 12·71	10·224	21 57 33·8	20·67	1 8·35	2 38·45	0·367
Sat.	32	4 37 18·09		N.22 5 49·9		1 8·41	2 29·65	

*Mean Time of the Semidiameter passing may be found by subtracting 0ˢ·18 from the *Sidereal* Time.

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AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S *Apparent* Right Ascension.	THE SUN'S *Apparent* Declination.	THE SUN'S Semidiam.*	Equation of Time, *to be added to Mean Time.*	Sidereal Time.
		h m s	° ′ ″	′ ″	m s	h m s
Wed.	1	2 34 30·74	N.15 9 27·1	15 53·9	3 4·16	2 37 34·90
Thur.	2	2 38 20·06	15 27 24·8	15 53·6	3 11·40	2 41 31·46
Frid.	3	2 42 9·95	15 45 7·2	15 53·4	3 18·06	2 45 28·01
Sat.	4	2 46 0·42	16 2 34·2	15 53·2	3 24·15	2 49 24·57
Sun.	5	2 49 51·46	16 19 45·3	15 53·0	3 29·66	2 53 21·12
Mon.	6	2 53 43·08	16 36 40·2	15 52·7	3 34·60	2 57 17·68
Tues.	7	2 57 35·28	16 53 18·6	15 52·5	3 38·96	3 1 14·24
Wed.	8	3 1 28·06	17 9 40·1	15 52·3	3 42·73	3 5 10·79
Thur.	9	3 5 21·42	17 25 44·5	15 52·1	3 45·93	3 9 7·35
Frid.	10	3 9 15·36	17 41 31·4	15 51·8	3 48·55	3 13 3·90
Sat.	11	3 13 9·87	17 57 0·5	15 51·6	3 50·59	3 17 0·46
Sun.	12	3 17 4·95	18 12 11·6	15 51·4	3 52·07	3 20 57·02
Mon.	13	3 21 0·60	18 27 4·3	15 51·2	3 52·98	3 24 53·57
Tues.	14	3 24 56·80	18 41 38·3	15 51·0	3 53·33	3 28 50·13
Wed.	15	3 28 53·56	18 55 53·4	15 50·9	3 53·12	3 32 46·68
Thur.	16	3 32 50·86	19 9 49·3	15 50·7	3 52·38	3 36 43·24
Frid.	17	3 36 48·71	19 23 25·7	15 50·5	3 51·09	3 40 39·80
Sat.	18	3 40 47·10	19 36 42·3	15 50·3	3 49·26	3 44 36·36
Sun.	19	3 44 46·03	19 49 39·0	15 50·1	3 46·88	3 48 32·91
Mon.	20	3 48 45·50	20 2 15·4	15 49·9	3 43·97	3 52 29·47
Tues.	21	3 52 45·49	20 14 31·3	15 49·8	3 40·53	3 56 26·02
Wed.	22	3 56 46·00	20 26 26·6	15 49·6	3 36·58	4 0 22·58
Thur.	23	4 0 47·04	20 38 0·9	15 49·5	3 32·10	4 4 19·14
Frid.	24	4 4 48·59	20 49 14·0	15 49·3	3 27·11	4 8 15·70
Sat.	25	4 8 50·64	21 0 5·8	15 49·1	3 21·61	4 12 12·25
Sun.	26	4 12 53·19	21 10 35·9	15 48·9	3 15·62	4 16 8·81
Mon.	27	4 16 56·23	21 20 44·2	15 48·7	3 9·14	4 20 5·37
Tues.	28	4 20 59·76	21 30 30·4	15 48·6	3 2·16	4 24 1·93
Wed.	29	4 25 3·77	21 39 54·4	15 48·4	2 54·71	4 27 58·48
Thur.	30	4 29 8·25	21 48 55·9	15 48·3	2 46·80	4 31 55·04
Frid.	31	4 33 13·17	21 57 34·7	15 48·2	2 38·43	4 35 51·60
Sat.	32	4 37 18·52	N.22 5 50·7	15 48·1	2 29·64	4 39 48·16

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

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MEAN TIME.

Day of the Month.	THE SUN'S *Apparent* Longitude. *Noon.*	THE SUN'S *Apparent* Latitude. *Noon.*	Logarithm of the Radius Vector of the Earth. *Noon.*	THE MOON'S Semidiameter. *Noon.*	THE MOON'S Semidiameter. *Midnight.*	THE MOON'S Horizontal Parallax. *Noon.*	THE MOON'S Horizontal Parallax. *Midnight.*
	° ′ ″	″		′ ″	′ ″	′ ″	′ ″
1	41 3 31·4	N.0·34	0·0035994	15 21·9	15 15·5	56 15·5	55 52·2
2	42 1 39·9	0·47	0·0037086	15 9·7	15 4·5	55 30·8	55 11·7
3	42 59 47·0	0·59	0·0038167	14 59·9	14 55·9	54 54·8	54 40·2
4	43 57 52·7	0·69	0·0039236	14 52·5	14 49·8	54 27·9	54 17·8
5	44 55 57·0	0·76	0·0040291	14 47·6	14 46·0	54 9·8	54 3·9
6	45 53 59·8	0·81	0·0041330	14 44·9	14 44·3	54 0·0	53 57·9
7	46 52 1·3	0·83	0·0042352	14 44·2	14 44·6	53 57·6	53 58·9
8	47 50 1·3	0·82	0·0043355	14 45·4	14 46·5	54 1·7	54 5·9
9	48 47 59·8	0·77	0·0044339	14 48·0	14 49·9	54 11·5	54 18·3
10	49 45 56·7	0·70	0·0045303	14 52·1	14 54·5	54 26·3	54 35·3
11	50 43 52·1	0·60	0·0046248	14 57·3	15 0·4	54 45·5	54 56·8
12	51 41 45·8	0·48	0·0047173	15 3·8	15 7·5	55 9·2	55 22·6
13	52 39 37·9	0·36	0·0048080	15 11·4	15 15·6	55 37·1	55 52·6
14	53 37 28·3	0·23	0·0048969	15 20·2	15 25·0	56 9·3	56 27·0
15	54 35 17·0	N.0·10	0·0049841	15 30·2	15 35·6	56 45·7	57 5·5
16	55 33 4·0	S.0·02	0·0050696	15 41·2	15 47·0	57 26·1	57 47·4
17	56 30 49·2	0·12	0·0051535	15 53·0	15 59·0	58 9·3	58 31·5
18	57 28 32·8	0·20	0·0052359	16 5·0	16 10·9	58 53·5	59 15·1
19	58 26 14·9	0·26	0·0053170	16 16·6	16 21·8	59 35·6	59 54·8
20	59 23 55·3	0·29	0·0053968	16 26·5	16 30·5	60 12·1	60 26·7
21	60 21 34·2	0·28	0·0054754	16 33·7	16 35·9	60 38·3	60 46·5
22	61 19 11·7	0·25	0·0055530	16 37·1	16 37·1	60 50·8	60 50·9
23	62 16 47·9	0·18	0·0056295	16 36·0	16 33·7	60 46·8	60 38·3
24	63 14 22·8	S.0·09	0·0057049	16 30·3	16 25·9	60 25·9	60 9·7
25	64 11 56·5	N.0·02	0·0057793	16 20·5	16 14·4	59 50·1	59 27·6
26	65 9 29·1	0·14	0·0058526	16 7·6	16 0·5	59 2·9	58 36·7
27	66 7 0·7	0·28	0·0059246	15 53·0	15 45·5	58 9·5	57 42·0
28	67 4 31·3	0·42	0·0059953	15 38·0	15 30·8	57 14·6	56 48·1
29	68 2 1·1	0·55	0·0060647	15 23·9	15 17·4	56 22·7	55 58·9
30	68 59 30·1	0·67	0·0061328	15 11·4	15 6·0	55 36·9	55 17·1
31	69 56 58·3	0·77	0·0061993	15 1·2	14 57·0	54 59·6	54 44·5
32	70 54 25·8	N.0·85	0·0062641	14 53·6	14 50·8	54 31·8	54 21·6

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MEAN TIME

Day of the Week.	Day of the Month.	THE MOON'S Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.	Age. Noon.	Meridian Passage.
		° ′ ″	° ′ ″	° ′ ″	° ′ ″	d	h m
Wed.	1	307 23 51·1	313 42 7·5	N.1 51 55·7	N.2 22 25·3	21·2	18 34·4
Thur.	2	319 55 39·9	326 5 4·4	2 50 49·3	3 16 54·0	22·2	19 17·9
Frid.	3	332 10 56·5	338 13 51·1	3 40 27·5	4 1 19·9	23·2	19 59·3
Sat.	4	344 14 21·3	350 12 58·1	4 19 22·5	4 34 27·9	24·2	20 39·6
Sun.	5	356 10 10·8	2 6 25·5	4 46 30·0	4 55 23·8	25·2	21 19·8
Mon.	6	8 2 6·3	13 57 34·3	5 1 5·2	5 3 31·8	26·2	22 1·0
Tues.	7	19 53 8·7	25 49 5·7	5 2 42·1	4 58 35·9	27·2	22 43·9
Wed.	8	31 45 40·1	37 43 4·5	4 51 15·0	4 40 42·1	28·2	23 29·2
Thur.	9	43 41 29·9	49 41 6·9	4 27 1·8	4 10 20·7	29·2	☌
Frid.	10	55 42 5·3	61 44 34·7	3 50 47·5	3 28 31·9	0·5	0 17·0
Sat.	11	67 48 45·6	73 54 48·7	3 3 45·9	2 36 43·9	1·5	1 7·2
Sun.	12	80 2 56·6	86 13 23·0	2 7 41·3	1 36 55·1	2·5	1 59·2
Mon.	13	92 26 23·8	98 42 16·3	N.1 4 44·3	N.0 31 29·4	3·5	2 51·9
Tues.	14	105 1 19·8	111 23 55·2	S.0 2 28·0	S.0 36 44·4	4·5	3 44·2
Wed.	15	117 50 24·2	124 21 9·1	1 10 55·2	1 44 34·5	5·5	4 35·3
Thur.	16	130 56 32·0	137 36 53·3	2 17 15·3	2 48 29·4	6·5	5 25·0
Frid.	17	144 22 31·2	151 13 40·2	3 17 47·2	3 44 39·2	7·5	6 13·8
Sat.	18	158 10 29·2	165 13 0·8	4 8 35·9	4 29 7·0	8·5	7 2·3
Sun.	19	172 21 9·7	179 34 41·5	4 45 45·5	4 58 5·2	9·5	7 51·6
Mon.	20	186 53 11·1	194 16 3·2	5 5 44·2	5 8 24·5	10·5	8 43·0
Tues.	21	201 42 32·5	209 11 43·8	5 5 56·0	4 58 13·5	11·5	9 37·5
Wed.	22	216 42 34·1	224 13 55·0	4 45 21·9	4 27 32·9	12·5	10 35·7
Thur.	23	231 44 34·7	239 13 22·4	4 5 7·7	3 38 34·0	13·5	11 37·3
Frid.	24	246 39 10·2	254 0 56·6	3 8 26·3	2 35 23·5	14·5	12 40·8
Sat.	25	261 17 48·3	268 29 2·0	2 0 7·3	1 23 20·4	15·5	13 43·4
Sun.	26	275 34 5·4	282 32 37·2	S.0 45 44·6	S.0 7 59·6	16·5	14 42·7
Mon.	27	289 24 26·9	296 9 33·4	N.0 29 18·6	N.1 5 37·0	17·5	15 37·4
Tues.	28	302 48 4·9	309 20 17·0	1 40 27·5	2 13 26·3	18·5	16 27·3
Wed.	29	315 46 30·9	322 7 13·6	2 44 13·0	3 12 31·6	19·5	17 13·2
Thur.	30	328 22 54·9	334 34 7·3	3 38 8·3	4 0 53·1	20·5	17 56·1
Frid.	31	340 41 25·1	346 45 23·4	4 20 37·4	4 37 14·7	21·5	18 37·2
Sat.	32	352 46 37·2	358 45 41·2	N.4 50 40·6	N.5 0 50·6	22·5	19 17·7

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MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 1.		
	h m s	° ′ ″	″
0	20 37 14·55	S. 16 37 54·7	105·73
1	20 39 19·73	16 27 20·3	106·37
2	20 41 24·53	16 16 42·1	107·00
3	20 43 28·96	16 6 0·1	107·62
4	20 45 33·02	15 55 14·4	108·23
5	20 47 36·71	15 44 25·0	108·83
6	20 49 40·03	15 33 32·0	109·41
7	20 51 43·00	15 22 35·5	109·99
8	20 53 45·60	15 11 35·6	110·55
9	20 55 47·85	15 0 32·3	111·10
10	20 57 49·76	14 49 25·7	111·64
11	20 59 51·32	14 38 15·8	112·17
12	21 1 52·53	14 27 2·8	112·69
13	21 3 53·41	14 15 46·7	113·20
14	21 5 53·95	14 4 27·5	113·70
15	21 7 54·16	13 53 5·3	114·18
16	21 9 54·05	13 41 40·2	114·66
17	21 11 53·61	13 30 12·2	115·13
18	21 13 52·85	13 18 41·4	115·58
19	21 15 51·78	13 7 7·9	116·03
20	21 17 50·40	12 55 31·8	116·46
21	21 19 48·72	12 43 53·0	116·89
22	21 21 46·73	12 32 11·6	117·30
23	21 23 44·44	S. 12 20 27·8	117·71
	THURSDAY 2.		
0	21 25 41·86	S. 12 8 41·6	118·11
1	21 27 38·99	11 56 52·9	118·50
2	21 29 35·83	11 45 1·9	118·87
3	21 31 32·40	11 33 8·7	119·24
4	21 33 28·69	11 21 13·3	119·60
5	21 35 24·70	11 9 15·7	119·95
6	21 37 20·45	10 57 15·9	120·29
7	21 39 15·93	10 45 14·2	120·62
8	21 41 11·15	10 33 10·5	120·94
9	21 43 6·12	10 21 4·8	121·26
10	21 45 0·84	10 8 57·2	121·56
11	21 46 55·31	9 56 47·9	121·85
12	21 48 49·53	9 44 36·8	122·14
13	21 50 43·52	9 32 23·9	122·42
14	21 52 37·28	9 20 9·4	122·69
15	21 54 30·80	9 7 53·2	122·96
16	21 56 24·10	8 55 35·5	123·21
17	21 58 17·18	8 43 16·3	123·46
18	22 0 10·05	8 30 55·6	123·69
19	22 2 2·70	8 18 33·4	123·92
20	22 3 55·14	8 6 9·8	124·14
21	22 5 47·38	7 53 44·9	124·36
22	22 7 39·42	7 41 18·8	124·56
23	22 9 31·26	7 28 51·5	124·76
24	22 11 22·91	S. 7 16 22·9	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 3.		
	h m s	° ′ ″	″
0	22 11 22·91	S. 7 16 22·9	124·95
1	22 13 14·37	7 3 53·2	125·13
2	22 15 5·66	6 51 22·4	125·31
3	22 16 56·76	6 38 50·6	125·47
4	22 18 47·69	6 26 17·7	125·63
5	22 20 38·45	6 13 43·9	125·78
6	22 22 29·05	6 1 9·2	125·93
7	22 24 19·49	5 48 33·6	126·07
8	22 26 9·77	5 35 57·2	126·20
9	22 27 59·90	5 23 20·0	126·32
10	22 29 49·88	5 10 42·1	126·43
11	22 31 39·71	4 58 3·5	126·54
12	22 33 29·41	4 45 24·3	126·64
13	22 35 18·97	4 32 44·5	126·73
14	22 37 8·41	4 20 4·1	126·82
15	22 38 57·72	4 7 23·2	126·90
16	22 40 46·90	3 54 41·8	126·97
17	22 42 35·97	3 42 0·0	127·03
18	22 44 24·93	3 29 17·8	127·09
19	22 46 13·77	3 16 35·2	127·14
20	22 48 2·51	3 3 52·3	127·19
21	22 49 51·15	2 51 9·2	127·23
22	22 51 39·69	2 38 25·8	127·26
23	22 53 28·14	S. 2 25 42·3	127·28
	SATURDAY 4.		
0	22 55 16·49	S. 2 12 58·6	127·30
1	22 57 4·76	2 0 14·8	127·31
2	22 58 52·95	1 47 31·0	127·31
3	23 0 41·07	1 34 47·1	127·31
4	23 2 29·12	1 22 3·2	127·30
5	23 4 17·10	1 9 19·5	127·28
6	23 6 5·01	0 56 35·8	127·26
7	23 7 52·86	0 43 52·2	127·23
8	23 9 40·65	0 31 8·8	127·19
9	23 11 28·39	0 18 25·6	127·15
10	23 13 16·09	S. 0 5 42·7	127·10
11	23 15 3·74	N. 0 6 59·9	127·04
12	23 16 51·35	0 19 42·2	126·98
13	23 18 38·93	0 32 24·1	126·92
14	23 20 26·47	0 45 5·6	126·84
15	23 22 13·99	0 57 46·7	126·76
16	23 24 1·48	1 10 27·2	126·67
17	23 25 48·95	1 23 7·2	126·57
18	23 27 36·41	1 35 46·7	126·47
19	23 29 23·86	1 48 25·5	126·37
20	23 31 11·30	2 1 3·7	126·25
21	23 32 58·73	2 13 41·2	126·13
22	23 34 46·16	2 26 18·0	126·00
23	23 36 33·59	2 38 54·0	125·87
24	23 38 21·03	N. 2 51 29·2	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SUNDAY 5.		
	h m s	° ′ ″	″
0	23 38 21·03	N. 2 51 29·2	125·73
1	23 40 8·48	3 4 3·6	125·58
2	23 41 55·95	3 16 37·1	125·43
3	23 43 43·44	3 29 9·6	125·27
4	23 45 30·95	3 41 41·2	125·10
5	23 47 18·48	3 54 11·8	124·93
6	23 49 6·05	4 6 41·4	124·75
7	23 50 53·65	4 19 9·9	124·56
8	23 52 41·28	4 31 37·3	124·37
9	23 54 28·96	4 44 3·5	124·17
10	23 56 16·68	4 56 28·5	123·97
11	23 58 4·45	5 8 52·3	123·75
12	23 59 52·27	5 21 14·8	123·53
13	0 1 40·15	5 33 36·0	123·30
14	0 3 28·09	5 45 55·8	123·07
15	0 5 16·09	5 58 14·3	122·83
16	0 7 4·15	6 10 31·3	122·59
17	0 8 52·28	6 22 46·8	122·34
18	0 10 40·49	6 35 0·8	122·08
19	0 12 28·78	6 47 13·3	121·81
20	0 14 17·15	6 59 24·2	121·54
21	0 16 5·60	7 11 33·4	121·26
22	0 17 54·14	7 23 40·9	120·97
23	0 19 42·77	N. 7 35 46·7	120·68
	MONDAY 6.		
0	0 21 31·49	N. 7 47 50·8	120·38
1	0 23 20·31	7 59 53·1	120·07
2	0 25 9·23	8 11 53·5	119·76
3	0 26 58·26	8 23 52·1	119·44
4	0 28 47·40	8 35 48·7	119·11
5	0 30 36·64	8 47 43·3	118·78
6	0 32 26·00	8 59 36·0	118·44
7	0 34 15·48	9 11 26·6	118·09
8	0 36 5·08	9 23 15·1	117·73
9	0 37 54·80	9 35 1·5	117·37
10	0 39 44·65	9 46 45·8	117·00
11	0 41 34·63	9 58 27·8	116·62
12	0 43 24·75	10 10 7·5	116·24
13	0 45 15·00	10 21 44·9	115·85
14	0 47 5·39	10 33 20·0	115·45
15	0 48 55·93	10 44 52·7	115·05
16	0 50 46·61	10 56 23·0	114·63
17	0 52 37·44	11 7 50·8	114·21
18	0 54 28·42	11 19 16·1	113·78
19	0 56 19·56	11 30 38·8	113·35
20	0 58 10·85	11 41 58·9	112·91
21	1 0 2·30	11 53 16·4	112·46
22	1 1 53·92	12 4 31·1	112·00
23	1 3 45·70	12 15 43·1	111·53
24	1 5 37·66	N. 12 26 52·3	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 7.		
	h m s	° ′ ″	″
0	1 5 37·66	N. 12 26 52·3	111·06
1	1 7 29·79	12 37 58·7	110·58
2	1 9 22·09	12 49 2·1	110·09
3	1 11 14·57	13 0 2·7	109·60
4	1 13 7·22	13 11 0·3	109·09
5	1 15 0·06	13 21 54·9	108·58
6	1 16 53·09	13 32 46·4	108·06
7	1 18 46·30	13 43 34·8	107·54
8	1 20 39·70	13 54 20·0	107·01
9	1 22 33·30	14 5 2·0	106·47
10	1 24 27·09	14 15 40·8	105·92
11	1 26 21·08	14 26 16·3	105·36
12	1 28 15·26	14 36 48·5	104·79
13	1 30 9·65	14 47 17·3	104·22
14	1 32 4·24	14 57 42·6	103·64
15	1 33 59·04	15 8 4·5	103·05
16	1 35 54·05	15 18 22·8	102·46
17	1 37 49·27	15 28 37·5	101·85
18	1 39 44·70	15 38 48·6	101·24
19	1 41 40·35	15 48 56·1	100·62
20	1 43 36·22	15 58 59·8	99·99
21	1 45 32·30	16 8 59·8	99·36
22	1 47 28·60	16 18 55·9	98·71
23	1 49 25·13	N. 16 28 48·1	98·05
	WEDNESDAY 8.		
0	1 51 21·89	N. 16 38 36·5	97·39
1	1 53 18·87	16 48 20·9	96·72
2	1 55 16·08	16 58 1·2	96·04
3	1 57 13·51	17 7 37·4	95·35
4	1 59 11·18	17 17 9·5	94·66
5	2 1 9·08	17 26 37·5	93·96
6	2 3 7·22	17 36 1·3	93·24
7	2 5 5·59	17 45 20·8	92·52
8	2 7 4·19	17 54 35·9	91·79
9	2 9 3·04	18 3 46·7	91·06
10	2 11 2·12	18 12 53·0	90·31
11	2 13 1·44	18 21 54·9	89·55
12	2 15 1·01	18 30 52·2	88·79
13	2 17 0·82	18 39 45·0	88·02
14	2 19 0·87	18 48 33·1	87·24
15	2 21 1·17	18 57 16·6	86·46
16	2 23 1·71	19 5 55·3	85·66
17	2 25 2·50	19 14 29·3	84·86
18	2 27 3·53	19 22 58·5	84·04
19	2 29 4·81	19 31 22·7	83·22
20	2 31 6·34	19 39 42·1	82·39
21	2 33 8·12	19 47 56·4	81·56
22	2 35 10·15	19 56 5·8	80·71
23	2 37 12·43	20 4 10·0	79·85
24	2 39 14·96	N. 20 12 9·1	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 9.				*SATURDAY* 11.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	2 39 14·96	N.20 12 9·1	78·99	0	4 21 56·73	N.24 39 3·7	28·32
1	2 41 17·74	20 20 3·0	78·12	1	4 24 10·25	24 41 53·6	27·10
2	2 43 20·77	20 27 51·7	77·24	2	4 26 23·94	24 44 36·2	25·87
3	2 45 24·05	20 35 35·2	76·35	3	4 28 37·79	24 47 11·5	24·64
4	2 47 27·58	20 43 13·3	75·45	4	4 30 51·80	24 49 39·3	23·40
5	2 49 31·36	20 50 46·0	74·54	5	4 33 5·96	24 51 59·7	22·16
6	2 51 35·38	20 58 13·3	73·63	6	4 35 20·28	24 54 12·7	20·92
7	2 53 39·66	21 5 35·0	72·71	7	4 37 34·74	24 56 18·2	19·67
8	2 55 44·19	21 12 51·3	71·78	8	4 39 49·35	24 58 16·2	18·41
9	2 57 48·97	21 20 2·0	70·84	9	4 42 4·09	25 0 6·7	17·15
10	2 59 54·00	21 27 7·0	69·89	10	4 44 18·97	25 1 49·6	15·88
11	3 1 59·27	21 34 6·4	68·94	11	4 46 33·99	25 3 24·9	14·62
12	3 4 4·79	21 41 0·0	67·98	12	4 48 49·13	25 4 52·6	13·35
13	3 6 10·56	21 47 47·9	67·01	13	4 51 4·40	25 6 12·7	12·07
14	3 8 16·57	21 54 29·9	66·03	14	4 53 19·78	25 7 25·1	10·79
15	3 10 22·83	22 1 6·1	65·04	15	4 55 35·28	25 8 29·9	9·51
16	3 12 29·34	22 7 36·3	64·05	16	4 57 50·90	25 9 27·0	8·22
17	3 14 36·09	22 14 0·6	63·04	17	5 0 6·62	25 10 16·3	6·93
18	3 16 43·08	22 20 18·9	62·03	18	5 2 22·44	25 10 57·9	5·64
19	3 18 50·31	22 26 31·1	61·01	19	5 4 38·36	25 11 31·8	4·35
20	3 20 57·78	22 32 37·2	59·99	20	5 6 54·37	25 11 57·9	3·05
21	3 23 5·49	22 38 37·1	58·95	21	5 9 10·48	25 12 16·2	1·75
22	3 25 13·44	22 44 30·8	57·91	22	5 11 26·67	25 12 26·6	0·44
23	3 27 21·62	N.22 50 18·2	56·86	23	5 13 42·94	N.25 12 29·3	0·86
	FRIDAY 10.				*SUNDAY* 12.		
0	3 29 30·04	N.22 55 59·4	55·80	0	5 15 59·29	N.25 12 24·1	2·16
1	3 31 38·69	23 1 34·2	54·73	1	5 18 15·72	25 12 11·1	3·47
2	3 33 47·56	23 7 2·6	53·66	2	5 20 32·21	25 11 50·3	4·78
3	3 35 56·67	23 12 24·6	52·58	3	5 22 48·76	25 11 21·6	6·10
4	3 38 6·01	23 17 40·0	51·49	4	5 25 5·38	25 10 45·0	7·41
5	3 40 15·57	23 22 49·0	50·40	5	5 27 22·05	25 10 0·5	8·73
6	3 42 25·35	23 27 51·4	49·29	6	5 29 38·77	25 9 8·2	10·05
7	3 44 35·35	23 32 47·1	48·18	7	5 31 55·53	25 8 7·9	11·36
8	3 46 45·57	23 37 36·2	47·07	8	5 34 12·34	25 6 59·7	12·68
9	3 48 56·01	23 42 18·6	45·95	9	5 36 29·19	25 5 43·6	14·00
10	3 51 6·66	23 46 54·3	44·82	10	5 38 46·07	25 4 19·6	15·32
11	3 53 17·53	23 51 23·2	43·68	11	5 41 2·98	25 2 47·6	16·64
12	3 55 28·60	23 55 45·3	42·53	12	5 43 19·91	25 1 7·7	17·96
13	3 57 39·88	24 0 0·5	41·38	13	5 45 36·87	24 59 19·9	19·29
14	3 59 51·36	24 4 8·8	40·22	14	5 47 53·84	24 57 24·2	20·61
15	4 2 3·05	24 8 10·2	39·06	15	5 50 10·82	24 55 20·6	21·93
16	4 4 14·93	24 12 4·5	37·89	16	5 52 27·81	24 53 9·0	23·25
17	4 6 27·00	24 15 51·9	36·72	17	5 54 44·81	24 50 49·5	24·57
18	4 8 39·27	24 19 32·2	35·53	18	5 57 1·80	24 48 22·1	25·88
19	4 10 51·73	24 23 5·4	34·34	19	5 59 18·79	24 45 46·8	27·20
20	4 13 4·37	24 26 31·4	33·15	20	6 1 35·77	24 43 3·6	28·52
21	4 15 17·19	24 29 50·3	31·95	21	6 3 52·74	24 40 12·5	29·84
22	4 17 30·20	24 33 2·1	30·75	22	6 6 9·69	24 37 13·5	31·15
23	4 19 43·38	24 36 6·5	29·54	23	6 8 26·62	24 34 6·6	32·46
24	4 21 56·73	N.24 39 3·7		24	6 10 43·53	N.24 30 51·8	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 13.				*WEDNESDAY* 15.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	6 10 43·53	N.24 30 51·8	33·77	0	7 58 43·39	N.19 27 4·5	92·13
1	6 13 0·40	24 27 29·2	35·08	1	8 0 55·59	19 17 51·7	93·21
2	6 15 17·24	24 23 58·7	36·39	2	8 3 7·65	19 8 32·4	94·28
3	6 17 34·05	24 20 20·4	37·69	3	8 5 19·58	18 59 6·8	95·34
4	6 19 50·81	24 16 34·2	39·00	4	8 7 31·38	18 49 34·8	96·39
5	6 22 7·53	24 12 40·2	40·30	5	8 9 43·05	18 39 56·5	97·43
6	6 24 24·20	24 8 38·5	41·59	6	8 11 54·59	18 30 11·9	98·46
7	6 26 40·82	24 4 28·9	42·89	7	8 14 5·99	18 20 21·1	99·49
8	6 28 57·39	24 0 11·5	44·18	8	8 16 17·26	18 10 24·2	100·51
9	6 31 13·90	23 55 46·4	45·47	9	8 18 28·40	18 0 21·1	101·53
10	6 33 30·34	23 51 13·6	46·76	10	8 20 39·42	17 50 11·9	102·53
11	6 35 46·72	23 46 33·0	48·05	11	8 22 50·30	17 39 56·7	103·52
12	6 38 3·04	23 41 44·8	49·33	12	8 25 1·05	17 29 35·6	104·52
13	6 40 19·28	23 36 48·9	50·60	13	8 27 11·68	17 19 8·5	105·50
14	6 42 35·45	23 31 45·3	51·87	14	8 29 22·18	17 8 35·5	106·47
15	6 44 51·54	23 26 34·0	53·14	15	8 31 32·56	16 57 56·7	107·43
16	6 47 7·54	23 21 15·1	54·41	16	8 33 42·81	16 47 12·1	108·39
17	6 49 23·46	23 15 48·6	55·67	17	8 35 52·94	16 36 21·8	109·33
18	6 51 39·30	23 10 14·6	56·93	18	8 38 2·95	16 25 25·8	110·27
19	6 53 55·05	23 4 33·1	58·18	19	8 40 12·84	16 14 24·1	111·21
20	6 56 10·70	22 58 44·0	59·43	20	8 42 22·61	16 3 16·9	112·13
21	6 58 26·26	22 52 47·4	60·67	21	8 44 32·27	15 52 4·1	113·04
22	7 0 41·73	22 46 43·4	61·91	22	8 46 41·80	15 40 45·9	113·95
23	7 2 57·09	N.22 40 31·9	63·15	23	8 48 51·22	N.15 29 22·2	114·84
	TUESDAY 14.				*THURSDAY* 16.		
0	7 5 12·35	N.22 34 13·0	64·38	0	8 51 0·53	N.15 17 53·2	115·73
1	7 7 27·51	22 27 46·8	65·60	1	8 53 9·73	15 6 18·8	116·61
2	7 9 42·56	22 21 13·2	66·82	2	8 55 18·82	14 54 39·2	117·48
3	7 11 57·50	22 14 32·2	68·03	3	8 57 27·80	14 42 54·3	118·34
4	7 14 12·33	22 7 44·0	69·24	4	8 59 36·68	14 31 4·3	119·19
5	7 16 27·05	22 0 48·6	70·44	5	9 1 45·46	14 19 9·2	120·03
6	7 18 41·65	21 53 45·9	71·64	6	9 3 54·13	14 7 9·0	120·86
7	7 20 56·14	21 46 36·1	72·83	7	9 6 2·71	13 55 3·8	121·68
8	7 23 10·51	21 39 19·1	74·02	8	9 8 11·19	13 42 53·7	122·50
9	7 25 24·76	21 31 55·0	75·20	9	9 10 19·58	13 30 38·7	123·30
10	7 27 38·89	21 24 23·8	76·37	10	9 12 27·88	13 18 18·9	124·10
11	7 29 52·90	21 16 45·6	77·54	11	9 14 36·09	13 5 54·3	124·88
12	7 32 6·78	21 9 0·3	78·70	12	9 16 44·21	12 53 24·9	125·66
13	7 34 20·54	21 1 8·1	79·86	13	9 18 52·25	12 40 50·9	126·43
14	7 36 34·17	20 53 8·9	81·01	14	9 21 0·21	12 28 12·3	127·19
15	7 38 47·68	20 45 2·8	82·15	15	9 23 8·09	12 15 29·2	127·93
16	7 41 1·06	20 36 49·9	83·29	16	9 25 15·90	12 2 41·6	128·67
17	7 43 14·31	20 28 30·2	84·42	17	9 27 23·64	11 49 49·6	129·40
18	7 45 27·43	20 20 3·7	85·54	18	9 29 31·31	11 36 53·2	130·12
19	7 47 40·42	20 11 30·4	86·66	19	9 31 38·91	11 23 52·5	130·83
20	7 49 53·27	20 2 50·5	87·77	20	9 33 46·45	11 10 47·5	131·53
21	7 52 6·00	19 54 3·9	88·87	21	9 35 53·94	10 57 38·3	132·22
22	7 54 18·60	19 45 10·6	89·97	22	9 38 1·36	10 44 25·0	132·89
23	7 56 31·06	19 36 10·8	91·05	23	9 40 8·73	10 31 7·7	133·56
24	7 58 43·39	N.19 27 4·5		24	9 42 16·05	N.10 17 46·3	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 17.				*SUNDAY* 19.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	9 42 16·05	N. 10 17 46·3	134·22	0	11 24 23·47	S. 1 20 21·8	152·40
1	9 44 23·33	10 4 21·0	134·87	1	11 26 33·19	1 35 36·2	152·46
2	9 46 30·56	9 50 51·8	135·51	2	11 28 43·06	1 50 51·0	152·51
3	9 48 37·75	9 37 18·7	136·14	3	11 30 53·10	2 6 6·0	152·55
4	9 50 44·91	9 23 41·9	136·75	4	11 33 3·31	2 21 21·3	152·56
5	9 52 52·03	9 10 1·4	137·36	5	11 35 13·70	2 36 36·7	152·56
6	9 54 59·12	8 56 17·2	137·96	6	11 37 24·26	2 51 52·1	152·55
7	9 57 6·19	8 42 29·4	138·54	7	11 39 35·00	3 7 7·4	152·53
8	9 59 13·23	8 28 38·1	139·12	8	11 41 45·93	3 22 22·6	152·48
9	10 1 20·26	8 14 43·4	139·68	9	11 43 57·05	3 37 37·5	152·43
10	10 3 27·27	8 0 45·3	140·23	10	11 46 8·37	3 52 52·0	152·35
11	10 5 34·27	7 46 43·9	140·78	11	11 48 19·88	4 8 6·1	152·26
12	10 7 41·27	7 32 39·3	141·31	12	11 50 31·60	4 23 19·7	152·16
13	10 9 48·26	7 18 31·5	141·83	13	11 52 43·53	4 38 32·7	152·05
14	10 11 55·25	7 4 20·5	142·34	14	11 54 55·68	4 53 45·0	151·91
15	10 14 2·25	6 50 6·4	142·84	15	11 57 8·04	5 8 56·4	151·76
16	10 16 9·25	6 35 49·4	143·32	16	11 59 20·63	5 24 7·0	151·59
17	10 18 16·27	6 21 29·5	143·80	17	12 1 33·45	5 39 16·5	151·40
18	10 20 23·31	6 7 6·7	144·26	18	12 3 46·50	5 54 25·0	151·20
19	10 22 30·36	5 52 41·1	144·71	19	12 5 59·78	6 9 32·2	150·98
20	10 24 37·44	5 38 12·8	145·15	20	12 8 13·31	6 24 38·0	150·74
21	10 26 44·55	5 23 41·9	145·58	21	12 10 27·08	6 39 42·5	150·49
22	10 28 51·70	5 9 8·4	145·99	22	12 12 41·10	6 54 45·5	150·22
23	10 30 58·87	N. 4 54 32·4	146·40	23	12 14 55·37	S. 7 9 46·8	149·94
	SATURDAY 18.				*MONDAY* 20.		
0	10 33 6·09	N. 4 39 54·0	146·79	0	12 17 9·89	S. 7 24 46·4	149·63
1	10 35 13·36	4 25 13·2	147·17	1	12 19 24·68	7 39 44·2	149·31
2	10 37 20·68	4 10 30·2	147·54	2	12 21 39·74	7 54 40·1	148·98
3	10 39 28·05	3 55 45·0	147·90	3	12 23 55·07	8 9 33·9	148·62
4	10 41 35·48	3 40 57·6	148·24	4	12 26 10·67	8 24 25·7	148·25
5	10 43 42·98	3 26 8·1	148·57	5	12 28 26·55	8 39 15·2	147·86
6	10 45 50·55	3 11 16·7	148·89	6	12 30 42·71	8 54 2·3	147·45
7	10 47 58·19	2 56 23·3	149·20	7	12 32 59·16	9 8 47·0	147·02
8	10 50 5·90	2 41 28·1	149·49	8	12 35 15·90	9 23 29·2	146·58
9	10 52 13·69	2 26 31·2	149·77	9	12 37 32·93	9 38 8·7	146·12
10	10 54 21·57	2 11 32·5	150·04	10	12 39 50·26	9 52 45·4	145·64
11	10 56 29·54	1 56 32·2	150·30	11	12 42 7·88	10 7 19·2	145·15
12	10 58 37·61	1 41 30·5	150·54	12	12 44 25·81	10 21 50·0	144·63
13	11 0 45·78	1 26 27·3	150·77	13	12 46 44·05	10 36 17·8	144·10
14	11 2 54·05	1 11 22·6	150·99	14	12 49 2·59	10 50 42·4	143·54
15	11 5 2·43	0 56 16·7	151·20	15	12 51 21·45	11 5 3·6	142·97
16	11 7 10·92	0 41 9·5	151·39	16	12 53 40·63	11 19 21·4	142·38
17	11 9 19·53	0 26 1·2	151·56	17	12 56 0·13	11 33 35·7	141·77
18	11 11 28·26	N. 0 10 51·8	151·72	18	12 58 19·95	11 47 46·3	141·14
19	11 13 37·12	S. 0 4 18·5	151·87	19	13 0 40·09	12 1 53·2	140·49
20	11 15 46·11	0 19 29·7	152·00	20	13 3 0·56	12 15 56·1	139·82
21	11 17 55·24	0 34 41·7	152·12	21	13 5 21·37	12 29 55·0	139·13
22	11 20 4·50	0 49 54·5	152·23	22	13 7 42·51	12 43 49·8	138·43
23	11 22 13·91	1 5 7·9	152·32	23	13 10 3·98	12 57 40·4	137·70
24	11 24 23·47	S. 1 20 21·8		24	13 12 25·79	S. 13 11 26·6	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 21.		
	h m s	° ′ ″	″
0	13 12 25·79	S. 13 11 26·6	136·96
1	13 14 47·94	13 25 8·3	136·19
2	13 17 10·44	13 38 45·5	135·41
3	13 19 33·29	13 52 17·9	134·61
4	13 21 56·48	14 5 45·6	133·78
5	13 24 20·02	14 19 8·3	132·94
6	13 26 43·91	14 32 25·9	132·08
7	13 29 8·15	14 45 38·4	131·20
8	13 31 32·75	14 58 45·6	130·30
9	13 33 57·70	15 11 47·4	129·38
10	13 36 23·00	15 24 43·6	128·44
11	13 38 48·67	15 37 34·2	127·48
12	13 41 14·69	15 50 19·1	126·51
13	13 43 41·07	16 2 58·2	125·51
14	13 46 7·80	16 15 31·2	124·49
15	13 48 34·90	16 27 58·2	123·46
16	13 51 2·35	16 40 18·9	122·40
17	13 53 30·17	16 52 33·3	121·33
18	13 55 58·34	17 4 41·3	120·23
19	13 58 26·87	17 16 42·7	119·12
20	14 0 55·76	17 28 37·4	117·98
21	14 3 25·00	17 40 25·3	116·83
22	14 5 54·60	17 52 6·3	115·66
23	14 8 24·56	S. 18 3 40·2	114·47
	WEDNESDAY 22.		
0	14 10 54·87	S. 18 15 7·0	113·26
1	14 13 25·54	18 26 26·6	112·03
2	14 15 56·55	18 37 38·7	110·78
3	14 18 27·92	18 48 43·4	109·52
4	14 20 59·63	18 59 40·5	108·23
5	14 23 31·69	19 10 29·9	106·93
6	14 26 4·09	19 21 11·5	105·61
7	14 28 36·83	19 31 45·2	104·27
8	14 31 9·91	19 42 10·8	102·91
9	14 33 43·32	19 52 28·3	101·54
10	14 36 17·06	20 2 37·5	100·15
11	14 38 51·13	20 12 38·4	98·74
12	14 41 25·53	20 22 30·9	97·32
13	14 44 0·24	20 32 14·8	95·88
14	14 46 35·27	20 41 50·1	94·42
15	14 49 10·61	20 51 16·7	92·95
16	14 51 46·26	21 0 34·4	91·45
17	14 54 22·21	21 9 43·1	89·95
18	14 56 58·46	21 18 42·8	88·42
19	14 59 35·00	21 27 33·3	86·89
20	15 2 11·83	21 36 14·6	85·34
21	15 4 48·94	21 44 46·6	83·77
22	15 7 26·33	21 53 9·2	82·18
23	15 10 3·98	22 1 22·3	80·59
24	15 12 41·90	S. 22 9 25·9	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 23.		
	h m s	° ′ ″	″
0	15 12 41·90	S. 22 9 25·9	78·98
1	15 15 20·08	22 17 19·8	77·36
2	15 17 58·51	22 25 4·0	75·72
3	15 20 37·19	22 32 38·3	74·07
4	15 23 16·10	22 40 2·7	72·41
5	15 25 55·24	22 47 17·2	70·73
6	15 28 34·61	22 54 21·6	69·05
7	15 31 14·19	23 1 15·9	67·35
8	15 33 53·97	23 8 0·0	65·64
9	15 36 33·96	23 14 33·8	63·92
10	15 39 14·14	23 20 57·3	62·19
11	15 41 54·51	23 27 10·5	60·45
12	15 44 35·05	23 33 13·2	58·70
13	15 47 15·76	23 39 5·4	56·94
14	15 49 56·63	23 44 47·1	55·17
15	15 52 37·64	23 50 18·1	53·40
16	15 55 18·79	23 55 38·5	51·62
17	15 58 0·08	24 0 48·2	49·83
18	16 0 41·49	24 5 47·2	48·03
19	16 3 23·01	24 10 35·4	46·23
20	16 6 4·64	24 15 12·7	44·42
21	16 8 46·36	24 19 39·2	42·60
22	16 11 28·16	24 23 54·9	40·78
23	16 14 10·04	S. 24 27 59·6	38·95
	FRIDAY 24.		
0	16 16 51·99	S. 24 31 53·3	37·12
1	16 19 33·99	24 35 36·1	35·29
2	16 22 16·04	24 39 7·8	33·45
3	16 24 58·12	24 42 28·5	31·61
4	16 27 40·22	24 45 38·2	29·77
5	16 30 22·34	24 48 36·8	27·93
6	16 33 4·47	24 51 24·4	26·08
7	16 35 46·58	24 54 0·9	24·23
8	16 38 28·68	24 56 26·3	22·39
9	16 41 10·75	24 58 40·6	20·54
10	16 43 52·79	25 0 43·8	18·69
11	16 46 34·77	25 2 36·0	16·85
12	16 49 16·70	25 4 17·1	15·00
13	16 51 58·56	25 5 47·1	13·15
14	16 54 40·34	25 7 6·0	11·31
15	16 57 22·03	25 8 13·9	9·48
16	17 0 3·62	25 9 10·8	7·64
17	17 2 45·10	25 9 56·6	5·81
18	17 5 26·46	25 10 31·5	3·98
19	17 8 7·69	25 10 55·3	2·15
20	17 10 48·78	25 11 8·2	0·33
21	17 13 29·72	25 11 10·2	1·48
22	17 16 10·50	25 11 1·3	3·29
23	17 18 51·10	25 10 41·6	5·09
24	17 21 31·53	S. 25 10 11·1	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 25.				*MONDAY* 27.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	17 21 31·53	S. 25 10 11·1	6·89	0	19 23 44·15	S. 21 34 8·9	79·42
1	17 24 11·77	25 9 29·8	8·68	1	19 26 6·95	21 26 12·4	80·57
2	17 26 51·80	25 8 37·7	10·46	2	19 28 29·29	21 18 9·0	81·70
3	17 29 31·63	25 7 35·0	12·23	3	19 30 51·17	21 9 58·8	82·82
4	17 32 11·24	25 6 21·6	13·99	4	19 33 12·59	21 1 41·9	83·91
5	17 34 50·62	25 4 57·6	15·75	5	19 35 33·55	20 53 18·4	85·00
6	17 37 29·76	25 3 23·1	17·50	6	19 37 54·06	20 44 48·4	86·06
7	17 40 8·66	25 1 38·1	19·24	7	19 40 14·10	20 36 12·0	87·11
8	17 42 47·30	24 59 42·7	20·97	8	19 42 33·68	20 27 29·3	88·15
9	17 45 25·68	24 57 36·9	22·69	9	19 44 52·80	20 18 40·4	89·17
10	17 48 3·79	24 55 20·7	24·40	10	19 47 11·46	20 9 45·4	90·17
11	17 50 41·61	24 52 54·3	26·10	11	19 49 29·66	20 0 44·4	91·16
12	17 53 19·15	24 50 17·7	27·79	12	19 51 47·40	19 51 37·4	92·13
13	17 55 56·39	24 47 31·0	29·46	13	19 54 4·68	19 42 24·6	93·09
14	17 58 33·33	24 44 34·2	31·13	14	19 56 21·51	19 33 6·1	94·03
15	18 1 9·95	24 41 27·4	32·78	15	19 58 37·89	19 23 41·9	94·96
16	18 3 46·25	24 38 10·7	34·43	16	20 0 53·81	19 14 12·2	95·86
17	18 6 22·22	24 34 44·1	36·05	17	20 3 9·27	19 4 37·0	96·76
18	18 8 57·87	24 31 7·8	37·67	18	20 5 24·28	18 54 56·4	97·64
19	18 11 33·17	24 27 21·8	39·27	19	20 7 38·85	18 45 10·6	98·50
20	18 14 8·12	24 23 26·2	40·86	20	20 9 52·97	18 35 19·6	99·35
21	18 16 42·72	24 19 21·0	42·42	21	20 12 6·64	18 25 23·5	100·18
22	18 19 16·96	24 15 6·3	44·00	22	20 14 19·87	18 15 22·4	101·00
23	18 21 50·83	S. 24 10 42·3	45·55	23	20 16 32·66	S. 18 5 16·4	101·81
	SUNDAY 26.				*TUESDAY* 28.		
0	18 24 24·33	S. 24 6 9·0	47·09	0	20 18 45·00	S. 17 55 5·6	102·60
1	18 26 57·45	24 1 26·4	48·62	1	20 20 56·91	17 44 50·0	103·37
2	18 29 30·19	23 56 34·7	50·13	2	20 23 8·39	17 34 29·8	104·13
3	18 32 2·54	23 51 34·0	51·62	3	20 25 19·44	17 24 5·0	104·88
4	18 34 34·49	23 46 24·3	53·10	4	20 27 30·05	17 13 35·7	105·61
5	18 37 6·04	23 41 5·7	54·56	5	20 29 40·24	17 3 2·1	106·33
6	18 39 37·19	23 35 38·3	56·01	6	20 31 50·01	16 52 24·1	107·03
7	18 42 7·93	23 30 2·2	57·44	7	20 33 59·35	16 41 41·9	107·72
8	18 44 38·25	23 24 17·6	58·86	8	20 36 8·28	16 30 55·6	108·39
9	18 47 8·15	23 18 24·4	60·27	9	20 38 16·79	16 20 5·2	109·05
10	18 49 37·63	23 12 22·8	61·66	10	20 40 24·89	16 9 10·9	109·70
11	18 52 6·69	23 6 12·9	63·03	11	20 42 32·58	15 58 12·7	110·34
12	18 54 35·31	22 59 54·7	64·38	12	20 44 39·87	15 47 10·7	110·96
13	18 57 3·49	22 53 28·4	65·73	13	20 46 46·76	15 36 4·9	111·57
14	18 59 31·24	22 46 54·0	67·05	14	20 48 53·25	15 24 55·5	112·16
15	19 1 58·55	22 40 11·7	68·36	15	20 50 59·34	15 13 42·5	112·75
16	19 4 25·41	22 33 21·5	69·66	16	20 53 5·04	15 2 26·1	113·32
17	19 6 51·83	22 26 23·5	70·93	17	20 55 10·35	14 51 6·2	113·87
18	19 9 17·81	22 19 17·9	72·19	18	20 57 15·28	14 39 42·9	114·42
19	19 11 43·33	22 12 4·8	73·44	19	20 59 19·83	14 28 16·4	114·95
20	19 14 8·40	22 4 44·2	74·66	20	21 1 24·00	14 16 46·7	115·47
21	19 16 33·02	21 57 16·2	75·88	21	21 3 27·80	14 5 13·9	115·98
22	19 18 57·19	21 49 40·9	77·07	22	21 5 31·23	13 53 38·0	116·47
23	19 21 20·90	21 41 58·4	78·26	23	21 7 34·30	13 41 59·2	116·96
24	19 23 44·15	S. 21 34 8·9		24	21 9 37·00	S. 13 30 17·5	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 29.		
	h m s	° ′ ″	″
0	21 9 37·00	S. 13 30 17·5	117·43
1	21 11 39·35	13 18 32·9	117·89
2	21 13 41·35	13 6 45·5	118·34
3	21 15 43·00	12 54 55·5	118·78
4	21 17 44·31	12 43 2·9	119·20
5	21 19 45·28	12 31 7·7	119·62
6	21 21 45·91	12 19 10·0	120·02
7	21 23 46·21	12 7 9·9	120·41
8	21 25 46·18	11 55 7·4	120·79
9	21 27 45·83	11 43 2·6	121·16
10	21 29 45·16	11 30 55·6	121·52
11	21 31 44·18	11 18 46·5	121·87
12	21 33 42·89	11 6 35·2	122·21
13	21 35 41·29	10 54 21·9	122·54
14	21 37 39·39	10 42 6·7	122·86
15	21 39 37·20	10 29 49·5	123·17
16	21 41 34·72	10 17 30·5	123·47
17	21 43 31·95	10 5 9·6	123·76
18	21 45 28·89	9 52 47·0	124·04
19	21 47 25·55	9 40 22·8	124·31
20	21 49 21·94	9 27 57·0	124·57
21	21 51 18·06	9 15 29·5	124·82
22	21 53 13·92	9 3 0·6	125·06
23	21 55 9·51	S. 8 50 30·2	125·30
	THURSDAY 30.		
0	21 57 4·85	S. 8 37 58·5	125·52
1	21 58 59·94	8 25 25·4	125·74
2	22 0 54·77	8 12 50·9	125·94
3	22 2 49·37	8 0 15·2	126·14
4	22 4 43·73	7 47 38·4	126·33
5	22 6 37·86	7 35 0·5	126·51
6	22 8 31·76	7 22 21·4	126·68
7	22 10 25·43	7 9 41·3	126·84
8	22 12 18·88	6 57 0·3	127·00
9	22 14 12·12	6 44 18·3	127·14
10	22 16 5·14	6 31 35·4	127·28
11	22 17 57·96	6 18 51·7	127·41
12	22 19 50·58	6 6 7·3	127·53
13	22 21 43·00	5 53 22·1	127·65
14	22 23 35·23	5 40 36·2	127·75
15	22 25 27·28	5 27 49·7	127·85
16	22 27 19·14	5 15 2·6	127·94
17	22 29 10·82	5 2 15·0	128·02
18	22 31 2·33	4 49 26·9	128·10
19	22 32 53·67	4 36 38·3	128·16
20	22 34 44·85	4 23 49·3	128·22
21	22 36 35·86	4 10 59·9	128·28
22	22 38 26·72	3 58 10·2	128·32
23	22 40 17·42	3 45 20·3	128·36
24	22 42 7·98	S. 3 32 30·2	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 31.		
	h m s	° ′ ″	″
0	22 42 7·98	S. 3 32 30·2	128·39
1	22 43 58·40	3 19 39·9	128·41
2	22 45 48·68	3 6 49·4	128·43
3	22 47 38·83	2 53 58·8	128·44
4	22 49 28·85	2 41 8·2	128·44
5	22 51 18·74	2 28 17·6	128·44
6	22 53 8·52	2 15 27·0	128·43
7	22 54 58·18	2 2 36·4	128·41
8	22 56 47·73	1 49 46·0	128·38
9	22 58 37·17	1 36 55·7	128·35
10	23 0 26·51	1 24 5·6	128·31
11	23 2 15·75	1 11 15·7	128·26
12	23 4 4·89	0 58 26·1	128·22
13	23 5 53·95	0 45 36·8	128·16
14	23 7 42·92	0 32 47·8	128·09
15	23 9 31·81	0 19 59·3	128·02
16	23 11 20·63	S. 0 7 11·1	127·95
17	23 13 9·38	N. 0 5 36·6	127·86
18	23 14 58·06	0 18 23·8	127·77
19	23 16 46·67	0 31 10·4	127·67
20	23 18 35·23	0 43 56·4	127·57
21	23 20 23·73	0 56 41·8	127·46
22	23 22 12·18	1 9 26·6	127·34
23	23 24 0·59	N. 1 22 10·7	127·22
	SATURDAY, JUNE 1.		
0	23 25 48·95	N. 1 34 54·0	

PHASES OF THE MOON.

	d	h	m
☾ *Last Quarter*	1	7	31·8
● New Moon	9	11	7·5
☽ *First Quarter*	17	4	2·8
○ Full Moon	23	18	5·7
☾ *Last Quarter*	30	22	25·0

	d	h
☾ Apogee	6	20
☾ Perigee	22	6

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LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		*Noon.*	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Spica	W.	105 31 55	2768	107 7 5	2783	108 41 55	2798	110 16 25	2814
	Antares	W.	59 51 25	2763	61 26 42	2779	63 1 38	2794	64 36 14	2808
	α Pegasi	E.	46 35 48	3055	45 6 43	3087	43 38 17	3120	42 10 31	3156
	Sun	E.	93 39 33	3121	92 11 49	3138	90 44 25	3153	89 17 20	3170
2	Antares	W.	72 24 37	2877	73 57 25	2889	75 29 58	2901	77 2 15	2913
	α Pegasi	E.	35 3 14	3370	33 40 24	3425	32 18 36	3486	30 57 56	3552
	Sun	E.	82 6 35	3244	80 41 18	3258	79 16 17	3271	77 51 31	3284
3	Antares	W.	84 40 7	2966	86 11 3	2975	87 41 47	2984	89 12 20	2993
	α Aquilæ	W.	39 57 42	4566	41 0 36	4479	42 4 47	4401	43 10 7	4331
	Sun	E.	70 51 18	3342	69 27 55	3352	68 4 43	3362	66 41 43	3371
4	Antares	W.	96 42 35	3029	98 12 12	3035	99 41 41	3040	101 11 4	3046
	α Aquilæ	W.	48 51 7	4069	50 1 39	4030	51 12 49	3994	52 24 34	3962
	Sun	E.	59 49 14	3412	58 27 11	3420	57 5 17	3426	55 43 30	3432
5	Antares	W.	108 36 25	3067	110 5 15	3070	111 34 1	3073	113 2 43	3076
	α Aquilæ	W.	58 30 38	3835	59 45 4	3815	60 59 51	3796	62 14 57	3779
	Fomalhaut	W.	35 9 41	4636	36 11 35	4530	37 15 1	4435	38 19 51	4351
	Sun	E.	48 56 13	3458	47 35 2	3463	46 13 57	3467	44 52 56	3471
6	α Aquilæ	W.	68 34 31	3710	69 51 8	3698	71 7 57	3688	72 24 57	3678
	Fomalhaut	W.	44 1 13	4034	45 12 19	3987	46 24 11	3943	47 36 47	3904
	Sun	E.	38 8 47	3486	36 48 7	3489	35 27 30	3492	34 6 57	3493
12	Sun	W.	28 25 34	3288	29 50 0	3276	31 14 40	3264	32 39 34	3252
	Pollux	E.	31 28 55	3021	29 59 9	3027	28 29 29	3036	27 0 1	3046
	Jupiter	E.	58 14 46	2930	56 43 5	2922	55 11 14	2916	53 39 15	2908
	Regulus	E.	67 51 23	2897	66 19 0	2890	64 46 29	2883	63 13 48	2875
	Saturn	E.	72 37 29	2914	71 5 28	2906	69 33 17	2899	68 0 57	2892
13	Sun	W.	39 47 30	3195	41 13 45	3183	42 40 14	3172	44 6 56	3161
	Jupiter	E.	45 56 55	2870	44 23 58	2863	42 50 52	2855	41 17 35	2848
	Regulus	E.	55 27 53	2836	53 54 12	2827	52 20 19	2819	50 46 16	2811
	Saturn	E.	60 16 55	2854	58 43 37	2846	57 10 9	2838	55 36 31	2831
	Spica	E.	109 30 2	2826	107 56 8	2818	106 22 3	2809	104 47 47	2799
14	Sun	W.	51 23 52	3104	52 51 57	3092	54 20 17	3080	55 48 51	3068
	Mars	W.	18 1 56	2972	19 32 44	2961	21 3 46	2950	22 35 2	2938
	Jupiter	E.	33 28 44	2810	31 54 29	2802	30 20 4	2796	28 45 31	2790
	Regulus	E.	42 53 14	2768	41 18 4	2759	39 42 42	2750	38 7 9	2741
	Saturn	E.	47 45 45	2790	46 11 4	2782	44 36 13	2775	43 1 12	2766
	Spica	E.	96 53 17	2750	95 17 44	2740	93 41 57	2730	92 5 57	2719
15	Sun	W.	63 15 29	3005	64 45 36	2992	66 15 59	2979	67 46 38	2965
	Mars	W.	30 15 3	2879	31 47 49	2866	33 20 51	2854	34 54 9	2841
	Regulus	E.	30 6 36	2702	28 29 58	2695	26 53 11	2689	25 16 17	2684
	Saturn	E.	35 3 37	2732	33 27 39	2726	31 51 34	2722	30 15 23	2718
	Spica	E.	84 2 19	2663	82 24 50	2652	80 47 6	2640	79 9 6	2628
16	Sun	W.	75 24 11	2897	76 56 34	2882	78 29 16	2869	80 2 15	2854
	Mars	W.	42 44 49	2776	44 19 49	2762	45 55 7	2748	47 30 43	2734
	Pollux	W.	21 33 19	2813	23 7 30	2768	24 42 40	2729	26 18 41	2693
	Saturn	E.	22 14 2	2731	20 38 4	2746	19 2 25	2769	17 27 16	2802

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LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		Midnight.	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Spica	W.	111 50 35	2828	113 24 26	2842	114 57 59	2856	116 31 14	2870
	Antares	W.	66 10 31	2823	67 44 29	2837	69 18 9	2851	70 51 31	2863
	α Pegasi	E.	40 43 29	3193	39 17 11	3233	37 51 41	3276	36 27 1	3321
	Sun	E.	87 50 35	3185	86 24 8	3201	84 58 0	3215	83 32 9	3230
2	Antares	W.	78 34 17	2924	80 6 5	2935	81 37 39	2946	83 9 0	2957
	α Pegasi	E.	29 38 29	3627	28 20 24	3712	27 3 56	3809	25 48 57	3919
	Sun	E.	76 27 1	3296	75 2 45	3308	73 38 43	3319	72 14 54	3331
3	Antares	W.	90 42 42	3001	92 12 54	3008	93 42 57	3016	95 12 50	3022
	α Aquilæ	W.	44 16 31	4267	45 23 54	4210	46 32 11	4159	47 41 16	4111
	Sun	E.	65 18 53	3380	63 56 14	3389	62 33 45	3397	61 11 25	3405
4	Antares	W.	102 40 19	3051	104 9 29	3056	105 38 33	3060	107 7 31	3064
	α Aquilæ	W.	53 36 51	3932	54 49 38	3905	56 2 53	3879	57 16 34	3856
	Sun	E.	54 21 50	3438	53 0 17	3444	51 38 50	3448	50 17 28	3454
5	Antares	W.	114 31 22	3078	115 59 59	3080	117 28 33	3081	118 57 6	3082
	α Aquilæ	W.	63 30 21	3764	64 46 1	3749	66 1 57	3735	67 18 7	3722
	Fomalhaut	W.	39 25 57	4274	40 33 14	4204	41 41 36	4142	42 50 57	4085
	Sun	E.	43 31 59	3474	42 11 6	3477	40 50 16	3480	39 29 30	3483
6	α Aquilæ	W.	73 42 8	3669	74 59 28	3660	76 16 58	3651	77 34 37	3644
	Fomalhaut	W.	48 50 3	3867	50 3 56	3833	51 18 24	3802	52 33 24	3773
	Sun	E.	32 46 25	3496	31 25 57	3499	30 5 32	3501	28 45 9	3505
12	Sun	W.	34 4 42	3240	35 30 4	3229	36 55 39	3217	38 21 28	3206
	Pollux	E.	25 30 45	3060	24 1 46	3079	22 33 11	3103	21 5 5	3135
	Jupiter	E.	52 7 6	2901	50 34 48	2893	49 2 20	2885	47 29 42	2878
	Regulus	E.	61 40 57	2867	60 7 56	2860	58 34 46	2852	57 1 25	2843
	Saturn	E.	66 28 28	2884	64 55 49	2877	63 23 1	2869	61 50 3	2862
13	Sun	W.	45 33 52	3150	47 1 1	3138	48 28 24	3127	49 56 1	3115
	Jupiter	E.	39 44 9	2839	38 10 32	2832	36 36 46	2824	35 2 50	2817
	Regulus	E.	49 12 2	2802	47 37 37	2794	46 3 1	2785	44 28 13	2776
	Saturn	E.	54 2 43	2822	52 28 44	2814	50 54 35	2806	49 20 15	2798
	Spica	E.	103 13 18	2790	101 38 37	2780	100 3 43	2770	98 28 36	2761
14	Sun	W.	57 17 40	3056	58 46 44	3043	60 16 4	3031	61 45 39	3018
	Mars	W.	24 6 33	2927	25 38 18	2915	27 10 18	2903	28 42 33	2891
	Jupiter	E.	27 10 50	2785	25 36 2	2780	24 1 8	2776	22 26 9	2775
	Regulus	E.	36 31 24	2733	34 55 28	2725	33 19 22	2717	31 43 4	2709
	Saturn	E.	41 26 0	2759	39 50 38	2752	38 15 7	2744	36 39 26	2738
	Spica	E.	90 29 43	2708	88 53 14	2697	87 16 30	2686	85 39 32	2675
15	Sun	W.	69 17 35	2952	70 48 48	2938	72 20 18	2924	73 52 6	2911
	Mars	W.	36 27 43	2828	38 1 34	2816	39 35 41	2802	41 10 6	2789
	Regulus	E.	23 39 15	2681	22 2 9	2679	20 25 1	2680	18 47 55	2685
	Saturn	E.	28 39 7	2716	27 2 48	2716	25 26 29	2717	23 50 12	2722
	Spica	E.	77 30 49	2617	75 52 17	2604	74 13 27	2591	72 34 20	2580
16	Sun	W.	81 35 33	2839	83 9 10	2825	84 43 6	2810	86 17 21	2795
	Mars	W.	49 6 37	2720	50 42 50	2706	52 19 22	2692	53 56 13	2678
	Pollux	W.	27 55 30	2662	29 33 1	2633	31 11 11	2607	32 49 56	2582
	Saturn	E.	15 52 51	2852	14 19 31	2927	12 47 46	3040	11 18 23	3219

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		Noon.	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
16	Spica	E.	70 54 57	2567	69 15 16	2553	67 35 17	2541	65 55 1	2528
	Antares	E.	116 34 37	2561	114 54 48	2548	113 14 41	2535	111 34 17	2522
17	Sun	W.	87 51 55	2781	89 26 48	2765	91 2 2	2751	92 37 34	2736
	Mars	W.	55 33 23	2663	57 10 52	2649	58 48 41	2635	60 26 49	2620
	Pollux	W.	34 29 16	2559	36 9 7	2537	37 49 29	2516	39 30 20	2495
	Spica	E.	57 29 5	2462	55 46 59	2448	54 4 33	2435	52 21 48	2421
	Antares	E.	103 7 37	2455	101 25 20	2441	99 42 43	2427	97 59 47	2413
18	Sun	W.	100 40 15	2661	102 17 47	2647	103 55 38	2632	105 33 49	2617
	Mars	W.	68 42 27	2547	70 22 35	2533	72 3 3	2519	73 43 50	2504
	Pollux	W.	48 1 22	2404	49 44 51	2388	51 28 43	2371	53 13 0	2355
	Jupiter	W.	19 57 58	2455	21 40 15	2429	23 23 8	2407	25 6 33	2386
	Regulus	W.	11 14 43	2598	12 53 41	2524	14 34 21	2469	16 16 17	2426
	Spica	E.	43 43 20	2355	41 58 41	2343	40 13 45	2330	38 28 30	2318
	Antares	E.	89 20 8	2344	87 35 13	2330	85 49 57	2317	84 4 22	2303
19	Sun	W.	113 49 39	2547	115 29 47	2535	117 10 12	2521	118 50 56	2509
	Mars	W.	82 12 42	2435	83 55 27	2422	85 38 31	2410	87 21 52	2396
	Pollux	W.	62 0 1	2280	63 46 30	2266	65 33 20	2253	67 20 29	2239
	Jupiter	W.	33 50 35	2298	35 36 37	2283	37 23 2	2269	39 9 47	2254
	Regulus	W.	24 58 20	2291	26 44 32	2272	28 31 12	2255	30 18 18	2238
	Saturn	W.	20 33 27	2410	22 16 48	2373	24 1 2	2342	25 46 0	2315
	Spica	E.	29 37 55	2263	27 51 1	2254	26 3 53	2245	24 16 33	2238
	Antares	E.	75 11 31	2237	73 23 59	2224	71 36 8	2212	69 47 59	2200
20	Sun	W.	127 18 51	2450	129 1 14	2440	130 43 52	2431	132 26 43	2421
	Mars	W.	96 3 5	2337	97 48 10	2327	99 33 30	2317	101 19 5	2307
	Pollux	W.	76 21 0	2180	78 9 58	2169	79 59 13	2159	81 48 43	2149
	Jupiter	W.	48 8 34	2192	49 57 14	2181	51 46 11	2170	53 35 23	2160
	Regulus	W.	39 19 32	2168	41 8 48	2156	42 58 22	2145	44 48 12	2134
	Saturn	W.	34 39 31	2215	36 27 36	2199	38 16 5	2185	40 4 55	2172
	Antares	E.	60 42 51	2145	58 53 0	2134	57 2 53	2125	55 12 32	2116
	α Aquilæ	E.	112 27 34	2774	110 52 32	2749	109 16 57	2726	107 40 51	2704
21	Pollux	W.	90 59 35	2109	92 50 21	2103	94 41 15	2097	96 32 18	2092
	Jupiter	W.	62 44 56	2118	64 35 27	2112	66 26 8	2105	68 16 59	2100
	Regulus	W.	54 1 12	2090	55 52 27	2083	57 43 53	2077	59 35 28	2071
	Saturn	W.	49 13 37	2119	51 4 7	2111	52 54 49	2103	54 45 43	2097
	Antares	E.	45 57 30	2077	44 5 55	2071	42 14 11	2066	40 22 19	2061
	α Aquilæ	E.	99 33 53	2622	97 55 28	2611	96 16 48	2601	94 37 54	2593
22	Pollux	W.	105 49 5	2079	107 40 37	2078	109 32 10	2078	111 23 43	2079
	Jupiter	W.	77 32 56	2083	79 24 21	2081	81 15 49	2081	83 7 17	2081
	Regulus	W.	68 55 16	2053	70 47 28	2050	72 39 44	2050	74 32 0	2049
	Saturn	W.	64 2 19	2075	65 53 56	2073	67 45 36	2072	69 37 18	2072
	Spica	W.	15 0 47	2124	16 51 10	2107	18 41 59	2094	20 33 8	2085
	Antares	E.	31 1 23	2046	29 9 1	2046	27 16 38	2046	25 24 15	2047
	α Aquilæ	E.	86 21 25	2577	84 41 58	2579	83 2 34	2583	81 23 15	2588
	Fomalhaut	E.	111 28 8	2530	109 47 36	2518	108 6 48	2507	106 25 44	2498
23	Jupiter	W.	92 24 19	2092	94 15 31	2096	96 6 37	2101	97 57 35	2107
	Regulus	W.	83 53 7	2058	85 45 10	2063	87 37 6	2068	89 28 54	2073

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month	Star's Name and Position.		*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
16	Spica	E.	64 14 27	2515	62 33 34	2502	60 52 23	2488	59 10 53	2475
	Antares	E.	109 53 35	2509	108 12 34	2495	106 31 14	2482	104 49 35	2468
17	Sun	W.	94 13 26	2720	95 49 39	2706	97 26 11	2691	99 3 3	2676
	Mars	W.	62 5 17	2605	63 44 5	2591	65 23 12	2576	67 2 40	2562
	Pollux	W.	41 11 40	2477	42 53 26	2458	44 35 39	2439	46 18 18	2421
	Spica	E.	50 38 44	2408	48 55 21	2396	47 11 40	2382	45 27 39	2369
	Antares	E.	96 16 31	2399	94 32 55	2385	92 48 59	2371	91 4 43	2358
18	Sun	W.	107 12 21	2604	108 51 11	2589	110 30 22	2575	112 9 51	2561
	Mars	W.	75 24 57	2490	77 6 24	2476	78 48 11	2462	80 30 17	2449
	Pollux	W.	54 57 39	2339	56 42 42	2324	58 28 6	2309	60 13 53	2294
	Jupiter	W.	26 50 28	2366	28 34 52	2348	30 19 41	2331	32 4 56	2314
	Regulus	W.	17 59 14	2391	19 43 2	2362	21 27 32	2336	23 12 39	2313
	Spica	E.	36 42 57	2306	34 57 7	2294	33 10 59	2283	31 24 35	2272
	Antares	E.	82 18 27	2289	80 32 12	2276	78 45 38	2263	76 58 44	2250
19	Sun	W.	120 31 57	2496	122 13 16	2484	123 54 52	2472	125 36 44	2462
	Mars	W.	89 5 32	2384	90 49 30	2372	92 33 45	2360	94 18 17	2349
	Pollux	W.	69 7 58	2226	70 55 47	2214	72 43 53	2202	74 32 18	2190
	Jupiter	W.	40 56 54	2241	42 44 21	2228	44 32 7	2215	46 20 12	2204
	Regulus	W.	32 5 48	2222	33 53 43	2208	35 41 59	2194	37 30 35	2181
	Saturn	W.	27 31 38	2291	29 17 51	2269	31 4 36	2249	32 51 50	2231
	Spica	E.	22 29 2	2233	20 41 23	2230	18 53 40	2230	17 5 58	2233
	Antares	E.	67 59 32	2188	66 10 47	2177	64 21 45	2166	62 32 26	2155
20	Sun	W.	134 9 48	2412	135 53 5	2404	137 36 34	2397	139 20 13	2391
	Mars	W.	103 4 54	2298	104 50 57	2289	106 37 12	2281	108 23 40	2273
	Pollux	W.	83 38 27	2140	85 28 26	2132	87 18 37	2123	89 9 1	2116
	Jupiter	W.	55 24 50	2151	57 14 32	2141	59 4 28	2133	60 54 36	2126
	Regulus	W.	46 38 20	2124	48 28 42	2114	50 19 19	2105	52 10 10	2098
	Saturn	W.	41 54 5	2159	43 43 34	2149	45 33 19	2138	47 23 21	2128
	Antares	E.	53 21 57	2107	51 31 8	2099	49 40 7	2091	47 48 54	2084
	α Aquilæ	E.	106 4 16	2684	104 27 14	2666	102 49 48	2650	101 12 1	2635
21	Pollux	W.	98 23 29	2088	100 14 46	2085	102 6 8	2082	103 57 35	2080
	Jupiter	W.	70 7 58	2096	71 59 4	2092	73 50 16	2088	75 41 34	2085
	Regulus	W.	61 27 12	2066	63 19 4	2062	65 11 2	2057	67 3 7	2055
	Saturn	W.	56 36 46	2091	58 27 59	2086	60 19 19	2082	62 10 46	2078
	Antares	E.	38 30 19	2056	36 38 12	2053	34 46 0	2050	32 53 43	2048
	α Aquilæ	E.	92 58 49	2587	91 19 36	2581	89 40 15	2579	88 0 51	2577
22	Pollux	W.	113 15 14	2081	115 6 42	2084	116 58 6	2087	118 49 25	2092
	Jupiter	W.	84 58 46	2082	86 50 13	2083	88 41 39	2085	90 33 1	2088
	Regulus	W.	76 24 18	2050	78 16 34	2051	80 8 48	2053	82 1 0	2056
	Saturn	W.	71 29 1	2072	73 20 43	2072	75 12 25	2075	77 4 3	2077
	Spica	W.	22 24 30	2079	24 16 2	2074	26 7 41	2072	27 59 23	2072
	Antares	E.	23 31 53	2049	21 39 35	2052	19 47 22	2056	17 55 15	2062
	α Aquilæ	E.	79 44 4	2595	78 5 2	2604	76 26 12	2615	74 47 38	2628
	Fomalhaut	E.	104 44 27	2491	103 3 1	2485	101 21 27	2481	99 39 47	2479
23	Jupiter	W.	99 48 24	2113	101 39 4	2120	103 29 32	2128	105 19 49	2136
	Regulus	W.	91 20 35	2079	93 12 6	2086	95 3 26	2094	96 54 34	2102

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LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	*Noon.*	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
23	Saturn W.	78 55 38	2080	80 47 8	2084	82 38 31	2088	84 29 48	2094
	Spica W.	29 51 6	2072	31 42 48	2074	33 34 28	2077	35 26 3	2080
	α Aquilæ E.	73 9 21	2643	71 31 25	2660	69 53 52	2680	68 16 45	2702
	Fomalhaut E.	97 58 5	2479	96 16 22	2480	94 34 40	2482	92 53 2	2487
	α Pegasi E.	119 26 2	2236	117 38 28	2234	115 50 51	2233	114 3 13	2233
24	Jupiter W.	107 9 53	2145	108 59 43	2155	110 49 18	2166	112 38 37	2177
	Regulus W.	98 45 30	2111	100 36 13	2121	102 26 40	2130	104 16 53	2141
	Saturn W.	93 43 44	2132	95 33 55	2141	97 23 51	2152	99 13 31	2163
	Spica W.	44 42 5	2112	46 32 46	2121	48 23 13	2130	50 13 26	2140
	α Aquilæ E.	60 19 34	2852	58 46 13	2891	57 13 43	2934	55 42 7	2981
	Fomalhaut E.	84 27 1	2530	82 46 29	2542	81 6 14	2556	79 26 19	2573
	α Pegasi E.	105 9 45	2253	103 18 36	2260	101 31 37	2268	99 44 50	2277
25	Saturn W.	108 17 27	2226	110 5 15	2241	111 52 41	2256	113 39 45	2271
	Spica W.	59 20 25	2200	61 8 53	2213	62 57 1	2227	64 44 48	2241
	Antares W.	13 40 34	2215	15 28 39	2224	17 16 31	2235	19 4 7	2247
	α Aquilæ E.	48 20 44	3293	46 56 24	3375	45 33 39	3465	44 12 36	3563
	Fomalhaut E.	71 12 56	2675	69 35 43	2701	67 59 4	2728	66 23 1	2757
	α Pegasi E.	90 54 39	2335	89 9 30	2348	87 24 41	2363	85 40 13	2378
26	Spica W.	73 38 10	2320	75 23 41	2337	77 8 47	2353	78 53 29	2371
	Antares W.	27 57 12	2319	29 42 43	2335	31 27 51	2352	33 12 35	2369
	Fomalhaut E.	58 33 6	2932	57 1 27	2974	55 30 42	3018	54 0 52	3066
	α Pegasi E.	77 3 42	2465	75 21 39	2484	73 40 4	2504	71 58 56	2524
27	Spica W.	87 30 39	2460	89 12 49	2478	90 54 33	2496	92 35 52	2514
	Antares W.	41 50 2	2457	43 32 16	2474	45 14 5	2492	46 55 29	2511
	Fomalhaut E.	46 47 41	3363	45 24 42	3435	44 3 5	3515	42 42 58	3602
	α Pegasi E.	63 40 38	2635	62 2 31	2659	60 24 56	2684	58 47 55	2709
	α Arietis E.	105 58 31	2472	104 16 39	2490	102 35 12	2508	100 54 10	2526
	Sun E.	136 42 26	2785	135 7 38	2804	133 33 15	2822	131 59 15	2841
28	Spica W.	100 56 5	2606	102 34 52	2623	104 13 16	2641	105 51 15	2659
	Antares W.	55 16 10	2601	56 55 4	2619	58 33 33	2636	60 11 39	2654
	Fomalhaut E.	36 28 24	4178	35 19 37	4332	34 13 14	4504	33 9 26	4698
	α Pegasi E.	50 51 29	2847	49 18 2	2877	47 45 14	2909	46 13 7	2942
	α Arietis E.	92 35 15	2616	90 56 42	2634	89 18 33	2652	87 40 49	2669
	Sun E.	124 15 26	2936	122 43 53	2955	121 12 44	2974	119 41 58	2993
29	Antares W.	68 16 17	2739	69 52 5	2755	71 27 32	2771	73 2 38	2787
	α Pegasi E.	38 43 36	3136	37 16 10	3182	35 49 39	3232	34 24 8	3287
	α Arietis E.	79 37 57	2756	78 2 31	2772	76 27 26	2788	74 52 42	2804
	Sun E.	112 13 54	3082	110 45 23	3100	109 17 14	3117	107 49 25	3134
30	Antares W.	80 53 9	2860	82 26 19	2874	83 59 11	2887	85 31 47	2900
	α Aquilæ W.	37 18 7	4734	38 18 38	4618	39 20 47	4518	40 24 23	4429
	α Arietis E.	67 4 8	2880	65 31 23	2894	63 58 56	2907	62 26 46	2921
	Sun E.	100 35 17	3213	99 9 23	3228	97 43 47	3242	96 18 27	3256
31	Antares W.	93 10 49	2958	94 41 55	2968	96 12 48	2978	97 43 28	2988
	α Aquilæ W.	45 59 54	4109	47 9 47	4063	48 20 25	4022	49 31 43	3985
	α Arietis E.	54 50 6	2983	53 19 32	2994	51 49 12	3006	50 19 6	3017
	Sun E.	89 15 41	3318	87 51 50	3329	86 28 12	3340	85 4 47	3350

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
23	Saturn	W.	86 20 56	2100	88 11 55	2107	90 2 43	2115	91 53 20	2123
	Spica	W.	37 17 33	2085	39 8 55	2090	41 0 9	2097	42 51 12	2104
	α Aquilæ	E.	66 40 7	2726	65 4 2	2753	63 28 32	2783	61 53 42	2815
	Fomalhaut	E.	91 11 30	2492	89 30 6	2499	87 48 52	2507	86 7 49	2518
	α Pegasi	E.	112 15 35	2235	110 28 0	2238	108 40 29	2241	106 53 3	2247
24	Jupiter	W.	114 27 40	2189	116 16 24	2201	118 4 51	2214	119 52 58	2227
	Regulus	W.	106 6 49	2153	107 56 27	2165	109 45 48	2178	111 34 49	2190
	Saturn	W.	101 2 55	2174	102 52 1	2186	104 40 49	2199	106 29 18	2212
	Spica	W.	52 3 24	2151	53 53 6	2163	55 42 30	2174	57 31 37	2186
	α Aquilæ	E.	54 11 31	3034	52 42 0	3090	51 13 38	3151	49 46 30	3219
	Fomalhaut	E.	77 46 47	2590	76 7 38	2609	74 28 56	2629	72 50 41	2651
	α Pegasi	E.	97 58 17	2287	96 11 58	2297	94 25 54	2309	92 40 8	2321
25	Saturn	W.	115 26 27	2287	117 12 45	2304	118 58 38	2321	120 44 7	2338
	Spica	W.	66 32 14	2257	68 19 17	2272	70 5 58	2287	71 52 16	2304
	Antares	W.	20 51 25	2260	22 38 24	2274	24 25 2	2289	26 11 18	2304
	α Aquilæ	E.	42 53 21	3672	41 36 4	3793	40 20 55	3928	39 8 4	4077
	Fomalhaut	E.	64 47 37	2788	63 12 53	2820	61 38 51	2855	60 5 35	2892
	α Pegasi	E.	83 56 7	2394	82 12 24	2411	80 29 5	2429	78 46 11	2446
26	Spica	W.	80 37 46	2389	82 21 37	2406	84 5 3	2424	85 48 4	2442
	Antares	W.	34 56 54	2386	36 40 49	2404	38 24 18	2421	40 7 23	2439
	Fomalhaut	E.	52 32 1	3118	51 4 13	3173	49 37 31	3231	48 11 59	3295
	α Pegasi	E.	70 18 16	2545	68 38 6	2567	66 58 26	2590	65 19 17	2612
27	Spica	W.	94 16 45	2532	95 57 13	2551	97 37 15	2569	99 16 52	2587
	Antares	W.	48 36 27	2529	50 17 0	2547	51 57 8	2565	53 36 51	2583
	Fomalhaut	E.	41 24 26	3696	40 7 35	3799	38 52 32	3913	37 39 26	4038
	α Pegasi	E.	57 11 27	2735	55 35 33	2762	54 0 16	2789	52 25 34	2818
	α Arietis	E.	99 13 33	2544	97 33 21	2562	95 53 34	2580	94 14 12	2599
	Sun	E.	130 25 41	2860	128 52 31	2879	127 19 45	2898	125 47 24	2916
28	Spica	W.	107 28 50	2677	109 6 1	2694	110 42 49	2711	112 19 14	2728
	Antares	W.	61 49 21	2672	63 26 39	2689	65 3 34	2706	66 40 6	2722
	Fomalhaut	E.	32 8 26	4918	31 10 26	5168	30 15 40	5453	29 24 23	5780
	α Pegasi	E.	44 41 42	2977	43 11 0	3013	41 41 4	3051	40 11 55	3092
	α Arietis	E.	86 3 28	2687	84 26 31	2705	82 49 57	2722	81 13 46	2738
	Sun	E.	118 11 36	3011	116 41 37	3029	115 12 0	3047	113 42 46	3065
29	Antares	W.	74 37 23	2802	76 11 48	2817	77 45 54	2832	79 19 41	2846
	α Pegasi	E.	32 59 42	3347	31 36 25	3413	30 14 23	3487	28 53 44	3570
	α Arietis	E.	73 18 19	2820	71 44 17	2835	70 10 35	2850	68 37 12	2865
	Sun	E.	106 21 57	3151	104 54 49	3167	103 28 0	3182	102 1 29	3198
30	Antares	W.	87 4 6	2912	88 36 9	2924	90 7 57	2936	91 39 30	2947
	α Aquilæ	W.	41 29 18	4350	42 35 25	4279	43 42 37	4215	44 50 49	4159
	α Arietis	E.	60 54 54	2934	59 23 18	2947	57 51 59	2959	56 20 55	2971
	Sun	E.	94 53 24	3269	93 28 36	3281	92 4 3	3294	90 39 45	3306
31	Antares	W.	99 13 56	2996	100 44 14	3005	102 14 20	3013	103 44 17	3021
	α Aquilæ	W.	50 43 37	3951	51 56 5	3921	53 9 3	3894	54 22 29	3869
	α Arietis	E.	48 49 14	3026	47 19 34	3037	45 50 7	3046	44 20 51	3056
	Sun	E.	83 41 33	3359	82 18 30	3369	80 55 38	3378	79 32 56	3386

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Day of the Month.	Airy's Day Numbers—For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of E	F	G	H	Value of L
1	1·03995	1·05841	0·26320	1·34559	110·694
2	1·04828	1·04855	0·26385	1·34611	110·647
3	1·05660	1·03862	0·26450	1·34663	110·589
4	1·06491	1·02863	0·26516	1·34716	110·522
5	1·07320	1·01857	0·26583	1·34768	110·444
6	1·08147	1·00846	0·26651	1·34820	110·355
7	1·08970	0·99830	0·26719	1·34872	110·257
8	1·09791	0·98809	0·26788	1·34923	110·148
9	1·10609	0·97784	0·26857	1·34974	110·029
10	1·11421	0·96756	0·26926	1·35026	109·901
11	1·12230	0·95724	0·26996	1·35077	109·762
12	1·13034	0·94689	0·27067	1·35128	109·613
13	1·13833	0·93653	0·27138	1·35178	109·454
14	1·14629	0·92616	0·27209	1·35228	109·287
15	1·15419	0·91578	0·27281	1·35277	109·109
16	1·16204	0·90541	0·27353	1·35325	108·921
17	1·16984	0·89505	0·27427	1·35373	108·725
18	1·17757	0·88471	0·27501	1·35421	108·518
19	1·18523	0·87442	0·27575	1·35468	108·301
20	1·19284	0·86417	0·27650	1·35515	108·076
21	1·20038	0·85398	0·27725	1·35561	107·841
22	1·20786	0·84387	0·27800	1·35606	107·598
23	1·21528	0·83386	0·27875	1·35651	107·345
24	1·22264	0·82400	0·27951	1·35695	107·081
25	1·22993	0·81425	0·28028	1·35738	106·808
26	1·23716	0·80462	0·28105	1·35780	106·526
27	1·24432	0·79508	0·28182	1·35821	106·238
28	1·25141	0·78564	0·28259	1·35862	105·942
29	1·25844	0·77635	0·28337	1·35902	105·636
30	1·26540	0·76731	0·28415	1·35941	105·321
31	1·27228	0·75854	0·28493	1·35979	104·998
32	1·27910	0·75002	0·28572	1·36016	104·665

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Day of the Month.	Bessel's Day Numbers— For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of A	B	C	D	Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0d·965193. Days.	From Mean Noon of January 1. Day of the Year.	Fraction of the Year.*
					h m s			
1	−1·1473	−1·1323	+9·8015	−0·4532	21 18 55·01	39	120	·3285
2	1·1406	1·1404	9·8034	0·4491	21 14 59·10	40	121	·3313
3	1·1338	1·1483	9·8053	0·4449	21 11 3·19	41	122	·3340
4	−1·1267	−1·1559	+9·8072	−0·4408	21 7 7·28	42	123	·3368
5	1·1194	1·1633	9·8091	0·4365	21 3 11·37	43	124	·3395
6	1·1118	1·1704	9·8110	0·4323	20 59 15·46	44	125	·3422
7	−1·1040	−1·1772	+9·8130	−0·4280	20 55 19·55	45	126	·3450
8	1·0959	1·1839	9·8149	0·4237	20 51 23·64	46	127	·3477
9	1·0875	1·1903	9·8169	0·4193	20 47 27·73	47	128	·3504
10	−1·0789	−1·1965	+9·8188	−0·4149	20 43 31·82	48	129	·3532
11	1·0699	1·2024	9·8208	0·4105	20 39 35·91	49	130	·3559
12	1·0607	1·2082	9·8228	0·4061	20 35 40·00	50	131	·3587
13	−1·0511	−1·2138	+9·8248	−0·4016	20 31 44·09	51	132	·3614
14	1·0412	1·2192	9·8268	0·3972	20 27 48·18	52	133	·3641
15	1·0309	1·2243	9·8288	0·3927	20 23 52·26	53	134	·3669
16	−1·0203	−1·2293	+9·8308	−0·3882	20 19 56·35	54	135	·3696
17	1·0092	1·2342	9·8328	0·3837	20 16 0·44	55	136	·3724
18	0·9978	1·2388	9·8349	0·3793	20 12 4·53	56	137	·3751
19	−0·9859	−1·2433	+9·8369	−0·3748	20 8 8·62	57	138	·3778
20	0·9736	1·2476	9·8390	0·3703	20 4 12·71	58	139	·3806
21	0·9608	1·2518	9·8410	0·3658	20 0 16·80	59	140	·3833
22	−0·9475	−1·2557	+9·8430	−0·3614	19 56 20·89	60	141	·3860
23	0·9337	1·2596	9·8451	0·3569	19 52 24·98	61	142	·3888
24	0·9192	1·2632	9·8472	0·3525	19 48 29·07	62	143	·3915
25	−0·9042	−1·2667	+9·8492	−0·3482	19 44 33·16	63	144	·3943
26	0·8885	1·2701	9·8513	0·3438	19 40 37·24	64	145	·3970
27	0·8721	1·2733	9·8534	0·3395	19 36 41·33	65	146	·3997
28	−0·8549	−1·2764	+9·8554	−0·3353	19 32 45·42	66	147	·4025
29	0·8369	1·2793	9·8575	0·3311	19 28 49·51	67	148	·4052
30	0·8179	1·2821	9·8596	0·3269	19 24 53·60	68	149	·4079
31	0·7980	1·2848	9·8617	0·3228	19 20 57·69	69	150	·4107
32	−0·7771	−1·2873	+9·8638	−0·3187	19 17 1·77	70	151	·4134

* Add ·0031 if Fraction be required for the time *t*, see page 327.

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AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S *Apparent* Right Ascension.	Diff. for 1 hour.	THE SUN'S *Apparent* Declination.	Diff. for 1 hour.	Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, *to be subt. from* / *added to Apparent Time.*	Diff. for 1 hour.
		h m s	s	° ′ ″	″	m s	m s	s
Sat.	1	4 37 18·09	10·242	N.22 5 49·9	19·71	1 8·41	2 29·65	0·384
Sun.	2	4 41 23·90	10·259	22 13 43·0	18·75	1 8·47	2 20·43	0·401
Mon.	3	4 45 30·11	10·275	22 21 12·7	17·77	1 8·52	2 10·80	0·417
Tues.	4	4 49 36·70	10·290	22 28 19·1	16·78	1 8·57	2 0·79	0·432
Wed.	5	4 53 43·65	10·304	22 35 1·9	15·79	1 8·61	1 50·43	0·446
Thur.	6	4 57 50·95	10·317	22 41 20·9	14·80	1 8·66	1 39·72	0·459
Frid.	7	5 1 58·57	10·330	22 47 16·1	13·80	1 8·70	1 28·69	0·472
Sat.	8	5 6 6·48	10·341	22 52 47·3	12·80	1 8·74	1 17·37	0·483
Sun.	9	5 10 14·65	10·351	22 57 54·4	11·79	1 8·77	1 5·79	0·493
Mon.	10	5 14 23·07	10·360	23 2 37·3	10·77	1 8·81	0 53·96	0·502
Tues.	11	5 18 31·72	10·368	23 6 55·9	9·75	1 8·84	0 41·90	0·510
Wed.	12	5 22 40·56	10·375	23 10 50·0	8·73	1 8·87	0 29·65	0·517
Thur.	13	5 26 49·55	10·381	23 14 19·6	7·71	1 8·89	0 17·25	0·523
Frid.	14	5 30 58·69	10·386	23 17 24·6	6·68	1 8·91	0 4·71	0·528
Sat.	15	5 35 7·94	10·390	23 20 5·0	5·65	1 8·93	0 7·95	0·532
Sun.	16	5 39 17·29	10·393	23 22 20·7	4·63	1 8·94	0 20·71	0·535
Mon.	17	5 43 26·72	10·395	23 24 11·8	3·60	1 8·95	0 33·55	0·537
Tues.	18	5 47 36·19	10·396	23 25 38·1	2·57	1 8·96	0 46·43	0·538
Wed.	19	5 51 45·69	10·396	23 26 39·7	1·53	1 8·97	0 59·33	0·538
Thur.	20	5 55 55·20	10·395	23 27 16·5	0·50	1 8·97	1 12·24	0·538
Frid.	21	6 0 4·69	10·394	23 27 28·6	0·53	1 8·96	1 25·14	0·537
Sat.	22	6 4 14·15	10·392	23 27 15·9	1·56	1 8·96	1 38·01	0·534
Sun.	23	6 8 23·56	10·389	23 26 38·4	2·60	1 8·95	1 50·82	0·531
Mon.	24	6 12 32·90	10·385	23 25 36·1	3·63	1 8·94	2 3·57	0·527
Tues.	25	6 16 42·14	10·381	23 24 9·1	4·66	1 8·93	2 16·22	0·523
Wed.	26	6 20 51·28	10·375	23 22 17·4	5·68	1 8·91	2 28·76	0·517
Thur.	27	6 25 0·29	10·369	23 20 1·0	6·71	1 8·89	2 41·18	0·511
Frid.	28	6 29 9·15	10·362	23 17 20·0	7·73	1 8·86	2 53·45	0·505
Sat.	29	6 33 17·84	10·354	23 14 14·5	8·75	1 8·83	3 5·55	0·497
Sun.	30	6 37 26·34	10·345	23 10 44·5	9·77	1 8·80	3 17·47	0·488
Mon.	31	6 41 34·62		N.23 6 50·1		1 8·76	3 29·17	

*Mean Time of the Semidiameter passing may be found by subtracting 0ˢ·19 from the *Sidereal* Time.

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AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S *Apparent* Right Ascension.	THE SUN'S *Apparent* Declination.	THE SUN'S Semidiam.*	Equation of Time, *to be added to* / *subt. from Mean Time.*	Sidereal Time.
		h m s	° ′ ″	′ ″	m s	h m s
Sat.	1	4 37 18·52	N.22 5 50·7	15 48·1	2 29·64	4 39 48·16
Sun.	2	4 41 24·30	22 13 43·7	15 48·0	2 20·41	4 43 44·71
Mon.	3	4 45 30·48	22 21 13·4	15 47·8	2 10·79	4 47 41·27
Tues.	4	4 49 37·05	22 28 19·7	15 47·6	2 0·78	4 51 37·83
Wed.	5	4 53 43·97	22 35 2·4	15 47·5	1 50·42	4 55 34·39
Thur.	6	4 57 51·24	22 41 21·3	15 47·4	1 39·71	4 59 30·95
Frid.	7	5 1 58·83	22 47 16·5	15 47·3	1 28·68	5 3 27·50
Sat.	8	5 6 6·71	22 52 47·6	15 47·2	1 17·35	5 7 24·06
Sun.	9	5 10 14·84	22 57 54·7	15 47·1	1 5·78	5 11 20·62
Mon.	10	5 14 23·22	23 2 37·5	15 47·0	0 53·96	5 15 17·18
Tues.	11	5 18 31·84	23 6 56·0	15 46·9	0 41·90	5 19 13·74
Wed.	12	5 22 40·64	23 10 50·0	15 46·8	0 29·65	5 23 10·29
Thur.	13	5 26 49·59	23 14 19·6	15 46·7	0 17·26	5 27 6·85
Frid.	14	5 30 58·70	23 17 24·6	15 46·6	0 4·71	5 31 3·41
Sat.	15	5 35 7·92	23 20 5·0	15 46·6	0 7·95	5 34 59·97
Sun.	16	5 39 17·23	23 22 20·7	15 46·5	0 20·71	5 38 56·52
Mon.	17	5 43 26·62	23 24 11·8	15 46·5	0 33·54	5 42 53·08
Tues.	18	5 47 36·06	23 25 38·1	15 46·4	0 46·42	5 46 49·64
Wed.	19	5 51 45·52	23 26 39·7	15 46·4	0 59·32	5 50 46·20
Thur.	20	5 55 54·99	23 27 16·5	15 46·3	1 12·23	5 54 42·76
Frid.	21	6 0 4·44	23 27 28·6	15 46·3	1 25·13	5 58 39·32
Sat.	22	6 4 13·87	23 27 15·9	15 46·2	1 38·00	6 2 35·87
Sun.	23	6 8 23·24	23 26 38·4	15 46·2	1 50·81	6 6 32·43
Mon.	24	6 12 32·54	23 25 36·2	15 46·1	2 3·55	6 10 28·99
Tues.	25	6 16 41·75	23 24 9·2	15 46·1	2 16·20	6 14 25·55
Wed.	26	6 20 50·85	23 22 17·5	15 46·1	2 28·74	6 18 22·11
Thur.	27	6 24 59·82	23 20 1·3	15 46·0	2 41·16	6 22 18·67
Frid.	28	6 29 8·65	23 17 20·4	15 46·0	2 53·43	6 26 15·22
Sat.	29	6 33 17·31	23 14 14·9	15 46·0	3 5·53	6 30 11·78
Sun.	30	6 37 25·78	23 10 45·0	15 46·0	3 17·44	6 34 8·34
Mon.	31	6 41 34·03	N.23 6 50·7	15 45·9	3 29·13	6 38 4·90

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

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MEAN TIME.

Day of the Month.	THE SUN'S *Apparent* Longitude. *Noon.*	THE SUN'S *Apparent* Latitude. *Noon.*	Logarithm of the Radius Vector of the Earth. *Noon.*	THE MOON'S Semidiameter. *Noon.*	THE MOON'S Semidiameter. *Midnight.*	THE MOON'S Horizontal Parallax. *Noon.*	THE MOON'S Horizontal Parallax. *Midnight.*
	° ′ ″	″		′ ″	′ ″	′ ″	′ ″
1	70 54 25·8	N.0·85	0·0062641	14 53·6	14 50·8	54 31·8	54 21·6
2	71 51 52·7	0·90	0·0063269	14 48·7	14 47·2	54 13·9	54 8·6
3	72 49 19·0	0·92	0·0063876	14 46·4	14 46·3	54 5·6	54 5·0
4	73 46 44·5	0·91	0·0064462	14 46·6	14 47·6	54 6·4	54 9·8
5	74 44 9·3	0·87	0·0065026	14 49·0	14 50·9	54 15·1	54 22·0
6	75 41 33·6	0·80	0·0065566	14 53·2	14 55·9	54 30·4	54 40·2
7	76 38 57·1	0·71	0·0066081	14 58·8	15 2·1	54 51·0	55 2·9
8	77 36 19·8	0·60	0·0066571	15 5·5	15 9·2	55 15·6	55 29·0
9	78 33 41·7	0·47	0·0067036	15 13·0	15 17·0	55 43·0	55 57·4
10	79 31 2·8	0·34	0·0067475	15 21·0	15 25·1	56 12·2	56 27·3
11	80 28 23·1	0·21	0·0067890	15 29·3	15 33·5	56 42·6	56 58·1
12	81 25 42·6	N.0·09	0·0068281	15 37·8	15 42·1	57 13·7	57 29·4
13	82 23 1·2	S.0·02	0·0068649	15 46·4	15 50·7	57 45·1	58 0·9
14	83 20 18·9	0·11	0·0068996	15 54·9	15 59·2	58 16·5	58 31·9
15	84 17 35·8	0·17	0·0069321	16 3·2	16 7·2	58 46·8	59 1·3
16	85 14 51·8	0·20	0·0069626	16 10·9	16 14·3	59 14·9	59 27·4
17	86 12 7·0	0·21	0·0069912	16 17·3	16 19·9	59 38·5	59 48·0
18	87 9 21·5	0·18	0·0070181	16 22·0	16 23·4	59 55·4	60 0·6
19	88 6 35·3	0·13	0·0070433	16 24·1	16 24·0	60 3·1	60 2·7
20	89 3 48·5	S.0·05	0·0070669	16 23·0	16 21·3	59 59·3	59 52·9
21	90 1 1·1	N.0·05	0·0070890	16 18·7	16 15·3	59 43·5	59 30·9
22	90 58 13·3	0·18	0·0071097	16 11·1	16 6·2	59 15·7	58 57·8
23	91 55 25·2	0·32	0·0071290	16 0·8	15 54·9	58 37·9	58 16·2
24	92 52 36·8	0·45	0·0071469	15 48·6	15 42·2	57 53·3	57 29·7
25	93 49 48·2	0·58	0·0071634	15 35·6	15 29·2	57 5·8	56 42·2
26	94 46 59·6	0·70	0·0071783	15 22·9	15 17·0	56 19·3	55 57·4
27	95 44 10·9	0·80	0·0071916	15 11·4	15 6·3	55 37·0	55 18·4
28	96 41 22·4	0·88	0·0072032	15 1·7	14 57·8	55 1·7	54 47·3
29	97 38 34·0	0·94	0·0072129	14 54·5	14 51·9	54 35·3	54 25·7
30	98 35 45·9	0·96	0·0072207	14 50·0	14 48·8	54 18·7	54 14·2
31	99 32 57·9	N.0·96	0·0072265	14 48·3	14 48·4	54 12·4	54 13·0

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MEAN TIME.

THE MOON'S

Day of the Week.	Day of the Month.	Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.	Age. Noon.	Meridian Passage.
		° ′ ″	° ′ ″	° ′ ″	° ′ ″	d	h m
Sat.	1	352 46 37·2	358 45 41·2	N.4 50 40·6	N.5 0 50·6	22·5	19 17·7
Sun.	2	4 43 8·9	10 39 32·8	5 7 42·7	5 11 15·2	23·5	19 58·6
Mon.	3	16 35 23·4	22 31 9·2	5 11 27·7	5 8 19·9	24·5	20 40·8
Tues.	4	28 27 16·7	34 24 10·2	5 1 53·5	4 52 10·8	25·5	21 25·3
Wed.	5	40 22 11·5	46 21 39·8	4 39 15·9	4 23 13·9	26·5	22 12·3
Thur.	6	52 22 52·6	58 26 4·4	4 4 11·5	3 42 17·9	27·5	23 2·1
Frid.	7	64 31 28·1	70 39 14·5	3 17 43·7	2 50 42·0	28·5	23 54·1
Sat.	8	76 49 33·0	83 2 31·4	2 21 27·9	1 50 18·6	29·5	0
Sun.	9	89 18 16·9	95 36 56·1	1 17 33·8	N.0 43 35·3	0·9	0 47·3
Mon.	10	101 58 35·0	108 23 19·8	N.0 8 46·2	S.0 26 27·8	1·9	1 40·4
Tues.	11	114 51 17·0	121 22 32·8	S.1 1 40·7	1 36 24·2	2·9	2 32·4
Wed.	12	127 57 14·1	134 35 27·3	2 10 10·3	2 42 29·9	3·9	3 22·7
Thur.	13	141 17 18·7	148 2 53·8	3 12 54·2	3 40 54·8	4·9	4 11·5
Frid.	14	154 52 16·6	161 45 29·1	4 6 3·3	4 27 53·6	5·9	4 59·4
Sat.	15	168 42 30·9	175 43 18·0	4 46 0·9	5 0 2·8	6·9	5 47·3
Sun.	16	182 47 41·9	189 55 29·8	5 9 39·8	5 14 36·3	7·9	6 36·3
Mon.	17	197 6 23·5	204 19 59·1	5 14 40·9	5 9 47·8	8·9	7 27·7
Tues.	18	211 35 47·2	218 53 12·7	4 59 56·5	4 45 12·8	9·9	8 22·5
Wed.	19	226 11 35·7	233 30 12·3	4 25 49·2	4 2 5·0	10·9	9 21·0
Thur.	20	240 48 16·2	248 4 59·8	3 34 25·2	3 3 20·5	11·9	10 22·4
Frid.	21	255 19 35·8	262 31 19·3	2 29 26·5	1 53 21·4	12·9	11 24·9
Sat.	22	269 39 28·6	276 43 27·6	S.1 15 46·1	S.0 37 21·5	13·9	12 25·9
Sun.	23	283 42 45·4	290 36 57·9	N.0 1 12·6	N.0 39 18·4	14·9	13 23·3
Mon.	24	297 25 48·5	304 9 6·8	1 16 21·6	1 51 50·8	15·9	14 16·3
Tues.	25	310 46 50·3	317 19 2·6	2 25 19·6	2 56 25·8	16·9	15 4·8
Wed.	26	323 45 53·4	330 7 38·0	3 24 50·6	3 50 20·0	17·9	15 49·8
Thur.	27	336 24 36·3	342 37 12·3	4 12 42·8	4 31 50·8	18·9	16 32·4
Frid.	28	348 45 53·3	354 51 9·3	4 47 38·7	5 0 2·6	19·9	17 13·6
Sat.	29	0 53 31·9	6 53 34·5	5 9 0·9	5 14 32·8	20·9	17 54·6
Sun.	30	12 51 51·0	18 48 55·6	5 16 38·9	5 15 20·6	21·9	18 36·5
Mon.	31	24 45 22·5	30 41 45·2	N.5 10 40·2	N.5 2 40·6	22·9	19 20·0

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MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 1.				*MONDAY* 3.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	23 25 48·95	N. 1 34 54·0	127·08	0	0 53 1·21	N.11 18 51·5	113·52
1	23 27 37·28	1 47 36·5	126·95	1	0 54 52·42	11 30 12·6	113·08
2	23 29 25·58	2 0 18·2	126·81	2	0 56 43·78	11 41 31·1	112·63
3	23 31 13·85	2 12 59·1	126·66	3	0 58 35·29	11 52 46·9	112·17
4	23 33 2·09	2 25 39·1	126·51	4	1 0 26·96	12 3 59·9	111·71
5	23 34 50·31	2 38 18·1	126·35	5	1 2 18·78	12 15 10·2	111·24
6	23 36 38·52	2 50 56·2	126·18	6	1 4 10·77	12 26 17·6	110·76
7	23 38 26·72	3 3 33·3	126·01	7	1 6 2·92	12 37 22·2	110·28
8	23 40 14·90	3 16 9·3	125·83	8	1 7 55·24	12 48 23·9	109·79
9	23 42 3·09	3 28 44·3	125·64	9	1 9 47·73	12 59 22·7	109·29
10	23 43 51·27	3 41 18·1	125·45	10	1 11 40·40	13 10 18·5	108·79
11	23 45 39·46	3 53 50·8	125·25	11	1 13 33·24	13 21 11·2	108·28
12	23 47 27·65	4 6 22·3	125·05	12	1 15 26·27	13 32 0·8	107·76
13	23 49 15·86	4 18 52·6	124·84	13	1 17 19·48	13 42 47·4	107·23
14	23 51 4·08	4 31 21·6	124·62	14	1 19 12·87	13 53 30·8	106·70
15	23 52 52·33	4 43 49·4	124·40	15	1 21 6·46	14 4 11·0	106·16
16	23 54 40·60	4 56 15·8	124·17	16	1 23 0·23	14 14 48·0	105·61
17	23 56 28·90	5 8 40·8	123·94	17	1 24 54·20	14 25 21·7	105·06
18	23 58 17·23	5 21 4·4	123·70	18	1 26 48·37	14 35 52·0	104·49
19	0 0 5·59	5 33 26·6	123·45	19	1 28 42·73	14 46 18·9	103·92
20	0 1 54·00	5 45 47·3	123·19	20	1 30 37·30	14 56 42·4	103·35
21	0 3 42·45	5 58 6·5	122·93	21	1 32 32·08	15 7 2·5	102·76
22	0 5 30·95	6 10 24·1	122·67	22	1 34 27·06	15 17 19·1	102·17
23	0 7 19·50	N. 6 22 40·1	122·40	23	1 36 22·25	N.15 27 32·1	101·56
	SUNDAY 2.				*TUESDAY* 4.		
0	0 9 8·10	N. 6 34 54·5	122·12	0	1 38 17·66	N.15 37 41·4	100·95
1	0 10 56·77	6 47 7·2	121·83	1	1 40 13·28	15 47 47·1	100·33
2	0 12 45·50	6 59 18·2	121·54	2	1 42 9·12	15 57 49·1	99·71
3	0 14 34·30	7 11 27·5	121·25	3	1 44 5·18	16 7 47·3	99·08
4	0 16 23·17	7 23 34·9	120·94	4	1 46 1·47	16 17 41·8	98·44
5	0 18 12·12	7 35 40·6	120·63	5	1 47 57·98	16 27 32·4	97·79
6	0 20 1·14	7 47 44·4	120·32	6	1 49 54·71	16 37 19·2	97·13
7	0 21 50·25	7 59 46·3	120·00	7	1 51 51·67	16 47 2·0	96·47
8	0 23 39·44	8 11 46·3	119·67	8	1 53 48·86	16 56 40·8	95·80
9	0 25 28·72	8 23 44·3	119·33	9	1 55 46·29	17 6 15·5	95·12
10	0 27 18·10	8 35 40·3	118·99	10	1 57 43·96	17 15 46·2	94·43
11	0 29 7·57	8 47 34·2	118·64	11	1 59 41·86	17 25 12·8	93·73
12	0 30 57·14	8 59 26·1	118·29	12	2 1 39·99	17 34 35·2	93·03
13	0 32 46·82	9 11 15·8	117·93	13	2 3 38·37	17 43 53·4	92·31
14	0 34 36·61	9 23 3·4	117·56	14	2 5 36·99	17 53 7·2	91·59
15	0 36 26·51	9 34 48·8	117·19	15	2 7 35·85	18 2 16·8	90·87
16	0 38 16·52	9 46 31·9	116·81	16	2 9 34·96	18 11 22·0	90·13
17	0 40 6·65	9 58 12·8	116·42	17	2 11 34·31	18 20 22·8	89·38
18	0 41 56·91	10 9 51·3	116·03	18	2 13 33·92	18 29 19·1	88·63
19	0 43 47·30	10 21 27·5	115·63	19	2 15 33·77	18 38 10·8	87·87
20	0 45 37·81	10 33 1·3	115·22	20	2 17 33·88	18 46 58·1	87·10
21	0 47 28·45	10 44 32·6	114·81	21	2 19 34·24	18 55 40·7	86·32
22	0 49 19·23	10 56 1·4	114·38	22	2 21 34·85	19 4 18·6	85·53
23	0 51 10·15	11 7 27·7	113·95	23	2 23 35·72	19 12 51·8	84·73
24	0 53 1·21	N.11 18 51·5		24	2 25 36·84	N.19 21 20·2	

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MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 5,		
	h m s	° ′ ″	″
0	2 25 36·84	N.19 21 20·2	83·93
1	2 27 38·22	19 29 43·8	83·12
2	2 29 39·86	19 38 2·5	82·30
3	2 31 41·75	19 46 16·3	81·47
4	2 33 43·91	19 54 25·1	80·63
5	2 35 46·33	20 2 28·9	79·78
6	2 37 49·01	20 10 27·6	78·93
7	2 39 51·95	20 18 21·2	78·07
8	2 41 55·15	20 26 9·6	77·19
9	2 43 58·62	20 33 52·8	76·31
10	2 46 2·35	20 41 30·7	75·43
11	2 48 6·34	20 49 3·2	74·53
12	2 50 10·59	20 56 30·4	73·62
13	2 52 15·11	21 3 52·1	72·70
14	2 54 19·90	21 11 8·3	71·78
15	2 56 24·95	21 18 19·0	70·85
16	2 58 30·26	21 25 24·1	69·91
17	3 0 35·84	21 32 23·6	68·96
18	3 2 41·68	21 39 17·4	68·00
19	3 4 47·78	21 46 5·4	67·03
20	3 6 54·14	21 52 47·6	66·06
21	3 9 0·76	21 59 24·0	65·08
22	3 11 7·65	22 5 54·5	64·09
23	3 13 14·79	N.22 12 19·0	63·09
	THURSDAY 6.		
0	3 15 22·19	N.22 18 37·5	62·08
1	3 17 29·85	22 24 50·0	61·07
2	3 19 37·77	22 30 56·4	60·05
3	3 21 45·94	22 36 56·7	59·01
4	3 23 54·37	22 42 50·8	57·97
5	3 26 3·05	22 48 38·6	56·93
6	3 28 11·98	22 54 20·2	55·87
7	3 30 21·17	22 59 55·4	54·81
8	3 32 30·60	23 5 24·3	53·73
9	3 34 40·28	23 10 46·7	52·65
10	3 36 50·21	23 16 2·6	51·56
11	3 39 0·37	23 21 12·0	50·47
12	3 41 10·78	23 26 14·8	49·36
13	3 43 21·43	23 31 11·0	48·25
14	3 45 32·32	23 36 0·5	47·13
15	3 47 43·44	23 40 43·3	46·00
16	3 49 54·80	23 45 19·3	44·87
17	3 52 6·39	23 49 48·6	43·73
18	3 54 18·21	23 54 11·0	42·58
19	3 56 30·25	23 58 26·5	41·43
20	3 58 42·51	24 2 35·1	40·27
21	4 0 55·00	24 6 36·7	39·10
22	4 3 7·70	24 10 31·3	37·92
23	4 5 20·62	24 14 18·8	36·74
24	4 7 33·75	N.24 17 59·2	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 7.		
	h m s	° ′ ″	″
0	4 7 33·75	N.24 17 59·2	35·55
1	4 9 47·09	24 21 32·5	34·35
2	4 12 0·63	24 24 58·6	33·15
3	4 14 14·38	24 28 17·5	31·94
4	4 16 28·32	24 31 29·1	30·72
5	4 18 42·45	24 34 33·4	29·50
6	4 20 56·78	24 37 30·4	28·27
7	4 23 11·30	24 40 20·1	27·04
8	4 25 26·00	24 43 2·3	25·80
9	4 27 40·89	24 45 37·1	24·55
10	4 29 55·95	24 48 4·4	23·30
11	4 32 11·18	24 50 24·1	22·04
12	4 34 26·58	24 52 36·4	20·78
13	4 36 42·15	24 54 41·1	19·51
14	4 38 57·88	24 56 38·2	18·24
15	4 41 13·76	24 58 27·7	16·97
16	4 43 29·80	25 0 9·5	15·68
17	4 45 45·99	25 1 43·6	14·40
18	4 48 2·32	25 3 10·0	13·11
19	4 50 18·79	25 4 28·6	11·81
20	4 52 35·40	25 5 39·5	10·51
21	4 54 52·14	25 6 42·6	9·21
22	4 57 9·00	25 7 37·8	7·90
23	4 59 25·99	N.25 8 25·2	6·59
	SATURDAY 8.		
0	5 1 43·09	N.25 9 4·8	5·28
1	5 4 0·31	25 9 36·5	3·96
2	5 6 17·63	25 10 0·2	2·64
3	5 8 35·06	25 10 16·1	1·31
4	5 10 52·58	25 10 24·0	0·01
5	5 13 10·20	25 10 23·9	1·34
6	5 15 27·91	25 10 15·8	2·67
7	5 17 45·70	25 9 59·8	4·00
8	5 20 3·57	25 9 35·8	5·34
9	5 22 21·52	25 9 3·8	6·68
10	5 24 39·54	25 8 23·7	8·02
11	5 26 57·62	25 7 35·6	9·36
12	5 29 15·75	25 6 39·4	10·70
13	5 31 33·94	25 5 35·2	12·05
14	5 33 52·18	25 4 22·9	13·39
15	5 36 10·47	25 3 2·5	14·74
16	5 38 28·80	25 1 34·1	16·08
17	5 40 47·16	24 59 57·6	17·43
18	5 43 5·56	24 58 13·0	18·78
19	5 45 23·98	24 56 20·3	20·12
20	5 47 42·42	24 54 19·6	21·47
21	5 50 0·87	24 52 10·7	22·82
22	5 52 19·34	24 49 53·8	24·17
23	5 54 37·82	24 47 28·8	25·51
24	5 56 56·29	N.24 44 55·8	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SUNDAY 9.		
	h m s	° ′ ″	″
0	5 56 56·29	N.24 44 [illegible]·3	26·85
1	5 59 14·76	24 42 14·7	28·20
2	6 1 33·22	24 39 25·5	29·54
3	6 3 51·67	24 36 28·3	30·88
4	6 6 10·10	24 33 23·0	32·22
5	6 8 28·51	24 30 9·6	33·56
6	6 10 46·90	24 26 48·3	34·89
7	6 13 5·25	24 23 18·9	36·23
8	6 15 23·56	24 19 41·5	37·56
9	6 17 41·84	24 15 56·2	38·89
10	6 20 0·07	24 12 2·8	40·22
11	6 22 18·25	24 8 1·5	41·54
12	6 24 36·38	24 3 52·2	42·87
13	6 26 54·45	23 59 35·0	44·19
14	6 29 12·45	23 55 9·9	45·50
15	6 31 30·39	23 50 36·9	46·81
16	6 33 48·26	23 45 56·0	48·12
17	6 36 6·06	23 41 7·2	49·43
18	6 38 23·78	23 36 10·6	50·73
19	6 40 41·41	23 31 6·3	52·02
20	6 42 58·96	23 25 54·2	53·31
21	6 45 16·42	23 20 34·3	54·60
22	6 47 33·79	23 15 6·7	55·88
23	6 49 51·06	N.23 9 31·4	57·16
	MONDAY 10.		
0	6 52 8·23	N.23 3 48·4	58·43
1	6 54 25·30	22 57 57·8	59·70
2	6 56 42·26	22 51 59·6	60·96
3	6 58 59·11	22 45 53·8	62·22
4	7 1 15·85	22 39 40·5	63·47
5	7 3 32·47	22 33 19·6	64·72
6	7 5 48·98	22 26 51·3	65·96
7	7 8 5·36	22 20 15·6	67·19
8	7 10 21·62	22 13 32·4	68·42
9	7 12 37·75	22 6 41·9	69·65
10	7 14 53·75	21 59 44·0	70·86
11	7 17 9·62	21 52 38·8	72·07
12	7 19 25·35	21 45 26·4	73·27
13	7 21 40·95	21 38 6·8	74·47
14	7 23 56·41	21 30 40·0	75·66
15	7 26 11·72	21 23 6·0	76·85
16	7 28 26·89	21 15 24·9	78·02
17	7 30 41·92	21 7 36·8	79·19
18	7 32 56·80	20 59 41·6	80·35
19	7 35 11·53	20 51 39·5	81·50
20	7 37 26·11	20 43 30·5	82·65
21	7 39 40·54	20 35 14·6	83·79
22	7 41 54·81	20 26 51·9	84·92
23	7 44 8·93	20 18 22·4	86·04
24	7 46 22·89	N.20 9 46·1	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 11.		
	h m s	° ′ ″	″
0	7 46 22·89	N.20 9 46·1	87·15
1	7 48 36·70	20 1 3·2	88·26
2	7 50 50·35	19 52 13·6	89·36
3	7 53 3·84	19 43 17·5	90·45
4	7 55 17·17	19 34 14·8	91·53
5	7 57 30·34	19 25 5·6	92·60
6	7 59 43·35	19 15 50·0	93·67
7	8 1 56·20	19 6 28·0	94·72
8	8 4 8·88	18 56 59·6	95·77
9	8 6 21·40	18 47 25·0	96·81
10	8 8 33·76	18 37 44·1	97·84
11	8 10 45·96	18 27 57·1	98·86
12	8 12 57·99	18 18 3·9	99·87
13	8 15 9·86	18 8 4·6	100·88
14	8 17 21·57	17 57 59·3	101·87
15	8 19 33·12	17 47 48·1	102·86
16	8 21 44·51	17 37 30·9	103·84
17	8 23 55·73	17 27 7·9	104·80
18	8 26 6·79	17 16 39·1	105·76
19	8 28 17·69	17 6 4·5	106·71
20	8 30 28·43	16 55 24·2	107·65
21	8 32 39·01	16 44 38·3	108·58
22	8 34 49·43	16 33 46·8	109·50
23	8 36 59·70	N.16 22 49·8	110·41
	WEDNESDAY 12.		
0	8 39 9·81	N.16 11 47·4	111·31
1	8 41 19·77	16 0 39·6	112·20
2	8 43 29·57	15 49 26·4	113·08
3	8 45 39·22	15 38 7·9	113·95
4	8 47 48·72	15 26 44·2	114·81
5	8 49 58·07	15 15 15·4	115·66
6	8 52 7·27	15 3 41·4	116·50
7	8 54 16·32	14 52 2·4	117·33
8	8 56 25·23	14 40 18·4	118·15
9	8 58 34·00	14 28 29·5	118·97
10	9 0 42·63	14 16 35·7	119·77
11	9 2 51·11	14 4 37·1	120·56
12	9 4 59·45	13 52 33·8	121·34
13	9 7 7·66	13 40 25·8	122·11
14	9 9 15·74	13 28 13·1	122·87
15	9 11 23·69	13 15 55·9	123·62
16	9 13 31·51	13 3 34·2	124·36
17	9 15 39·21	12 51 8·1	125·09
18	9 17 46·78	12 38 37·6	125·80
19	9 19 54·23	12 26 2·7	126·51
20	9 22 1·56	12 13 23·6	127·21
21	9 24 8·78	12 0 40·4	127·90
22	9 26 15·88	11 47 53·0	128·58
23	9 28 22·87	11 35 1·5	129·24
24	9 30 29·75	N.11 22 6·0	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 13.				*SATURDAY* 15.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	9 30 29·75	N. 11 22 6·0	129·89	0	11 11 1·42	N. 0 4 56·8	148·24
1	9 32 36·53	11 9 6·6	130·54	1	11 13 7·48	S. 0 9 52·6	148·33
2	9 34 43·20	10 56 3·4	131·18	2	11 15 13·64	0 24 42·6	148·41
3	9 36 49·78	10 42 56·3	131·80	3	11 17 19·88	0 39 33·1	148·48
4	9 38 56·26	10 29 45·5	132·41	4	11 19 26·22	0 54 23·9	148·53
5	9 41 2·65	10 16 31·0	133·01	5	11 21 32·67	1 9 15·2	148·57
6	9 43 8·95	10 3 12·9	133·60	6	11 23 39·22	1 24 6·6	148·60
7	9 45 15·16	9 49 51·3	134·19	7	11 25 45·88	1 38 58·2	148·62
8	9 47 21·29	9 36 26·2	134·75	8	11 27 52·66	1 53 49·9	148·62
9	9 49 27·34	9 22 57·7	135·31	9	11 29 59·57	2 8 41·7	148·61
10	9 51 33·32	9 9 25·8	135·86	10	11 32 6·60	2 23 33·4	148·59
11	9 53 39·22	8 55 50·6	136·40	11	11 34 13·76	2 38 24·9	148·56
12	9 55 45·05	8 42 12·2	136·92	12	11 36 21·05	2 53 16·2	148·50
13	9 57 50·82	8 28 30·7	137·43	13	11 38 28·48	3 8 7·2	148·44
14	9 59 56·52	8 14 46·1	137·94	14	11 40 36·06	3 22 57·8	148·36
15	10 2 2·17	8 0 58·5	138·43	15	11 42 43·79	3 37 48·0	148·27
16	10 4 7·76	7 47 7·9	138·91	16	11 44 51·67	3 52 37·7	148·17
17	10 6 13·30	7 33 14·4	139·38	17	11 46 59·71	4 7 26·7	148·05
18	10 8 18·79	7 19 18·1	139·84	18	11 49 7·92	4 22 15·0	147·92
19	10 10 24·24	7 5 19·0	140·29	19	11 51 16·29	4 37 2·5	147·77
20	10 12 29·65	6 51 17·3	140·72	20	11 53 24·83	4 51 49·1	147·61
21	10 14 35·02	6 37 13·0	141·15	21	11 55 33·55	5 6 34·8	147·44
22	10 16 40·36	6 23 6·1	141·56	22	11 57 42·46	5 21 19·5	147·25
23	10 18 45·67	N. 6 8 56·7	141·97	23	11 59 51·55	S. 5 36 3·0	147·05
	FRIDAY 14.				*SUNDAY* 16.		
0	10 20 50·95	N. 5 54 44·8	142·36	0	12 2 0·83	S. 5 50 45·3	146·84
1	10 22 56·21	5 40 30·6	142·74	1	12 4 10·31	6 5 26·3	146·61
2	10 25 1·46	5 26 14·2	143·11	2	12 6 19·98	6 20 6·0	146·37
3	10 27 6·70	5 11 55·5	143·47	3	12 8 29·86	6 34 44·2	146·11
4	10 29 11·93	4 57 34·7	143·82	4	12 10 39·95	6 49 20·8	145·83
5	10 31 17·15	4 43 11·8	144·15	5	12 12 50·26	7 3 55·8	145·55
6	10 33 22·38	4 28 46·9	144·47	6	12 15 0·78	7 18 29·1	145·24
7	10 35 27·61	4 14 20·1	144·78	7	12 17 11·52	7 33 0·6	144·92
8	10 37 32·85	3 59 51·4	145·08	8	12 19 22·49	7 47 30·1	144·59
9	10 39 38·10	3 45 20·9	145·37	9	12 21 33·69	8 1 57·6	144·24
10	10 41 43·36	3 30 48·7	145·64	10	12 23 45·13	8 16 23·1	143·88
11	10 43 48·65	3 16 14·8	145·91	11	12 25 56·80	8 30 46·4	143·50
12	10 45 53·97	3 1 39·4	146·16	12	12 28 8·72	8 45 7·4	143·11
13	10 47 59·32	2 47 2·5	146·40	13	12 30 20·89	8 59 26·1	142·71
14	10 50 4·70	2 32 24·1	146·63	14	12 32 33·31	9 13 42·3	142·28
15	10 52 10·12	2 17 44·3	146·85	15	12 34 45·98	9 27 56·0	141·85
16	10 54 15·59	2 3 3·2	147·05	16	12 36 58·91	9 42 7·1	141·39
17	10 56 21·10	1 48 20·9	147·24	17	12 39 12·11	9 56 15·5	140·92
18	10 58 26·66	1 33 37·4	147·42	18	12 41 25·57	10 10 21·0	140·43
19	11 0 32·29	1 18 52·9	147·59	19	12 43 39·31	10 24 23·6	139·93
20	11 2 37·97	1 4 7·4	147·74	20	12 45 53·32	10 38 23·2	139·41
21	11 4 43·72	0 49 21·0	147·88	21	12 48 7·61	10 52 19·7	138·88
22	11 6 49·55	0 34 33·7	148·01	22	12 50 22·18	11 6 13·0	138·33
23	11 8 55·45	0 19 45·6	148·13	23	12 52 37·04	11 20 2·9	137·76
24	11 11 1·42	N. 0 4 56·8		24	12 54 52·19	S. 11 33 49·5	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 17.		
	h m s	° ′ ″	″
0	12 54 52·19	S. 11 33 49·5	137·19
1	12 57 7·63	11 47 32·6	136·59
2	12 59 23·37	12 1 12·2	135·98
3	13 1 39·41	12 14 48·1	135·35
4	13 3 55·76	12 28 20·2	134·71
5	13 6 12·41	12 41 48·4	134·04
6	13 8 29·37	12 55 12·7	133·36
7	13 10 46·64	13 8 32·9	132·67
8	13 13 4·23	13 21 48·9	131·95
9	13 15 22·14	13 35 0·6	131·22
10	13 17 40·37	13 48 7·9	130·48
11	13 19 58·92	14 1 10·8	129·72
12	13 22 17·80	14 14 9·1	128·94
13	13 24 37·01	14 27 2·7	128·14
14	13 26 56·55	14 39 51·6	127·33
15	13 29 16·42	14 52 35·6	126·50
16	13 31 36·64	15 5 14·6	125·65
17	13 33 57·19	15 17 48·5	124·79
18	13 36 18·07	15 30 17·3	123·91
19	13 38 39·30	15 42 40·7	123·01
20	13 41 0·88	15 54 58·7	122·09
21	13 43 22·79	16 7 11·2	121·16
22	13 45 45·05	16 19 18·2	120·21
23	13 48 7·66	S. 16 31 19·5	119·24
	TUESDAY 18.		
0	13 50 30·62	S. 16 43 15·0	118·26
1	13 52 53·93	16 55 4·6	117·26
2	13 55 17·58	17 6 48·1	116·24
3	13 57 41·59	17 18 25·5	115·21
4	14 0 5·95	17 29 56·8	114·15
5	14 2 30·66	17 41 21·8	113·08
6	14 4 55·72	17 52 40·3	112·00
7	14 7 21·13	18 3 52·3	110·89
8	14 9 46·89	18 14 57·6	109·77
9	14 12 13·01	18 25 56·2	108·63
10	14 14 39·48	18 36 48·0	107·48
11	14 17 6·30	18 47 32·9	106·31
12	14 19 33·47	18 58 10·8	105·12
13	14 22 0·99	19 8 41·5	103·92
14	14 24 28·86	19 19 5·0	102·70
15	14 26 57·07	19 29 21·2	101·46
16	14 29 25·62	19 39 30·0	100·21
17	14 31 54·52	19 49 31·3	98·94
18	14 34 23·76	19 59 24·9	97·65
19	14 36 53·34	20 9 10·8	96·35
20	14 39 23·26	20 18 48·9	95·03
21	14 41 53·51	20 28 19·0	93·70
22	14 44 24·10	20 37 41·2	92·35
23	14 46 55·01	20 46 55·3	90·98
24	14 49 26·25	S. 20 56 1·2	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 19.		
	h m s	° ′ ″	″
0	14 49 26·25	S. 20 56 1·2	89·61
1	14 51 57·82	21 4 58·8	88·21
2	14 54 29·70	21 13 48·1	86·80
3	14 57 1·90	21 22 28·9	85·38
4	14 59 34·41	21 31 1·2	83·94
5	15 2 7·23	21 39 24·8	82·48
6	15 4 40·36	21 47 39·7	81·01
7	15 7 13·79	21 55 45·8	79·53
8	15 9 47·51	22 3 42·9	78·03
9	15 12 21·52	22 11 31·1	76·52
10	15 14 55·82	22 19 10·2	75·00
11	15 17 30·39	22 26 40·2	73·46
12	15 20 5·25	22 34 1·0	71·91
13	15 22 40·38	22 41 12·5	70·35
14	15 25 15·77	22 48 14·6	68·77
15	15 27 51·42	22 55 7·2	67·19
16	15 30 27·32	23 1 50·3	65·59
17	15 33 3·46	23 8 23·8	63·98
18	15 35 39·85	23 14 47·7	62·35
19	15 38 16·47	23 21 1·8	60·72
20	15 40 53·31	23 27 6·2	59·08
21	15 43 30·38	23 33 0·7	57·43
22	15 46 7·65	23 38 45·2	55·76
23	15 48 45·13	S. 23 44 19·8	54·09
	THURSDAY 20.		
0	15 51 22·81	S. 23 49 44·4	52·41
1	15 54 0·68	23 54 58·9	50·72
2	15 56 38·73	24 0 3·2	49·01
3	15 59 16·95	24 4 57·2	47·31
4	16 1 55·34	24 9 41·1	45·59
5	16 4 33·89	24 14 14·7	43·87
6	16 7 12·58	24 18 37·9	42·14
7	16 9 51·42	24 22 50·7	40·40
8	16 12 30·39	24 26 53·1	38·66
9	16 15 9·48	24 30 45·1	36·91
10	16 17 48·69	24 34 26·6	35·16
11	16 20 28·00	24 37 57·5	33·39
12	16 23 7·41	24 41 17·8	31·62
13	16 25 46·91	24 44 27·6	29·86
14	16 28 26·49	24 47 26·7	28·08
15	16 31 6·14	24 50 15·2	26·30
16	16 33 45·85	24 52 53·0	24·52
17	16 36 25·61	24 55 20·2	22·74
18	16 39 5·40	24 57 36·6	20 95
19	16 41 45·23	24 59 42·3	19·17
20	16 44 25·08	25 1 37·3	17·38
21	16 47 4·94	25 3 21·6	15·59
22	16 49 44·80	25 4 55·1	13·79
23	16 52 24·65	25 6 17·9	12·00
24	16 55 4·48	S. 25 7 29·9	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 21.				*SUNDAY 23.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	16 55 4·48	S. 25 7 29·9	10·21	0	18 59 34·32	S. 22 43 51·8	68·07
1	16 57 44·28	25 8 31·1	8·42	1	19 2 2·55	22 37 3·4	69·42
2	17 0 24·05	25 9 21·6	6·63	2	19 4 30·37	22 30 6·9	70·75
3	17 3 3·77	25 10 1·4	4·84	3	19 6 57·80	22 23 2·4	72·06
4	17 5 43·42	25 10 30·5	3·05	4	19 9 24·82	22 15 50·0	73·36
5	17 8 23·01	25 10 48·8	1·27	5	19 11 51·43	22 8 29·9	74·64
6	17 11 2·52	25 10 56·4	0·51	6	19 14 17·63	22 1 2·0	75·91
7	17 13 41·95	25 10 53·3	2·29	7	19 16 43·41	21 53 26·5	77·16
8	17 16 21·28	25 10 39·6	4·07	8	19 19 8·78	21 45 43·6	78·39
9	17 19 0·50	25 10 15·2	5·84	9	19 21 33·73	21 37 53·3	79·61
10	17 21 39·61	25 9 40·1	7·60	10	19 23 58·26	21 29 55·6	80·82
11	17 24 18·59	25 8 54·5	9·37	11	19 26 22·36	21 21 50·7	82·01
12	17 26 57·44	25 7 58·3	11·12	12	19 28 46·04	21 13 38·6	83·18
13	17 29 36·14	25 6 51·6	12·87	13	19 31 9·29	21 5 19·5	84·34
14	17 32 14·68	25 5 34·4	14·62	14	19 33 32·12	20 56 53·5	85·48
15	17 34 53·06	25 4 6·7	16·36	15	19 35 54·51	20 48 20·6	86·61
16	17 37 31·27	25 2 28·5	18·09	16	19 38 16·47	20 39 41·0	87·72
17	17 40 9·29	25 0 39·9	19·81	17	19 40 38·00	20 30 54·7	88·81
18	17 42 47·12	24 58 41·0	21·53	18	19 42 59·10	20 22 1·8	89·88
19	17 45 24·76	24 56 31·9	23·24	19	19 45 19·77	20 13 2·5	90·94
20	17 48 2·19	24 54 12·4	24·94	20	19 47 40·00	20 3 56·9	91·98
21	17 50 39·40	24 51 42·7	26·63	21	19 49 59·79	19 54 45·0	93·01
22	17 53 16·39	24 49 2·9	28·32	22	19 52 19·15	19 45 26·9	94·02
23	17 55 53·14	S. 24 46 13·0	29·99	23	19 54 38·08	S. 19 36 2·8	95·02
	SATURDAY 22.				*MONDAY 24.*		
0	17 58 29·65	S. 24 43 13·0	31·66	0	19 56 56·57	S. 19 26 32·7	95·99
1	18 1 5·91	24 40 3·0	33·32	1	19 59 14·63	19 16 56·7	96·96
2	18 3 41·91	24 36 43·1	34·96	2	20 1 32·26	19 7 15·0	97·91
3	18 6 17·64	24 33 13·3	36·60	3	20 3 49·45	18 57 27·6	98·84
4	18 8 53·09	24 29 33·7	38·22	4	20 6 6·21	18 47 34·5	99·75
5	18 11 28·26	24 25 44·4	39·84	5	20 8 22·54	18 37 36·0	100·65
6	18 14 3·15	24 21 45·4	41·44	6	20 10 38·44	18 27 32·1	101·53
7	18 16 37·74	24 17 36·7	43·03	7	20 12 53·91	18 17 22·9	102·40
8	18 19 12·03	24 13 18·5	44·61	8	20 15 8·95	18 7 8·5	103·26
9	18 21 46·00	24 8 50·8	46·18	9	20 17 23·56	17 56 48·9	104·09
10	18 24 19·66	24 4 13·8	47·73	10	20 19 37·75	17 46 24·4	104·91
11	18 26 53·00	23 59 27·4	49·27	11	20 21 51·51	17 35 54·9	105·72
12	18 29 26·01	23 54 31·8	50·80	12	20 24 4·85	17 25 20·5	106·52
13	18 31 58·68	23 49 27·0	52·32	13	20 26 17·77	17 14 41·4	107·29
14	18 34 31·01	23 44 13·1	53·82	14	20 28 30·27	17 3 57·6	108·06
15	18 37 2·99	23 38 50·1	55·31	15	20 30 42·36	16 53 9·3	108·80
16	18 39 34·62	23 33 18·2	56·79	16	20 32 54·04	16 42 16·5	109·54
17	18 42 5·89	23 27 37·5	58·25	17	20 35 5·30	16 31 19·3	110·25
18	18 44 36·79	23 21 48·0	59·69	18	20 37 16·15	16 20 17·8	110·95
19	18 47 7·33	23 15 49·8	61·13	19	20 39 26·60	16 9 12·0	111·64
20	18 49 37·49	23 9 43·1	62·54	20	20 41 36·64	15 58 2·1	112·32
21	18 52 7·28	23 3 27·8	63·95	21	20 43 46·28	15 46 48·2	112·97
22	18 54 36·68	22 57 4·1	65·34	22	20 45 55·52	15 35 30·4	113·62
23	18 57 5·70	22 50 32·1	66·71	23	20 48 4·36	15 24 8·7	114·25
24	18 59 34·32	S. 22 43 51·8		24	20 50 12·81	S. 15 12 43·2	

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MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 25.		
	h m s	° ′ ″	″
0	20 50 12·81	S. 15 12 43·2	114·87
1	20 52 20·87	15 1 14·0	115·47
2	20 54 28·54	14 49 41·2	116·06
3	20 56 35·83	14 38 4·8	116·64
4	20 58 42·73	14 26 24·9	117·20
5	21 0 49·26	14 14 41·7	117·75
6	21 2 55·41	14 2 55·3	118·28
7	21 5 1·19	13 51 5·6	118·80
8	21 7 6·61	13 39 12·8	119·31
9	21 9 11·66	13 27 16·9	119·80
10	21 11 16·35	13 15 18·1	120·29
11	21 13 20·68	13 3 16·4	120·76
12	21 15 24·66	12 51 11·8	121·21
13	21 17 28·29	12 39 4·5	121·66
14	21 19 31·57	12 26 54·6	122·09
15	21 21 34·51	12 14 42·1	122·51
16	21 23 37·11	12 2 27·0	122·91
17	21 25 39·37	11 50 9·5	123·31
18	21 27 41·30	11 37 49·7	123·69
19	21 29 42·91	11 25 27·5	124·06
20	21 31 44·19	11 13 3·1	124·42
21	21 33 45·15	11 0 36·5	124·77
22	21 35 45·80	10 48 7·9	125·11
23	21 37 46·14	S. 10 35 37·3	125·44
	WEDNESDAY 26.		
0	21 39 46·17	S. 10 23 4·7	125·75
1	21 41 45·90	10 10 30·2	126·06
2	21 43 45·33	9 57 53·9	126·35
3	21 45 44·46	9 45 15·8	126·63
4	21 47 43·30	9 32 36·0	126·90
5	21 49 41·86	9 19 54·6	127·16
6	21 51 40·13	9 7 11·6	127·41
7	21 53 38·13	8 54 27·1	127·65
8	21 55 35·86	8 41 41·2	127·88
9	21 57 33·32	8 28 53·9	128·10
10	21 59 30·51	8 16 5·3	128·31
11	22 1 27·44	8 3 15·5	128·51
12	22 3 24·11	7 50 24·4	128·70
13	22 5 20·53	7 37 32·2	128·88
14	22 7 16·71	7 24 38·9	129·05
15	22 9 12·65	7 11 44·6	129·21
16	22 11 8·34	6 58 49·4	129·36
17	22 13 3·80	6 45 53·3	129·50
18	22 14 59·03	6 32 56·3	129·63
19	22 16 54·04	6 19 58·5	129·76
20	22 18 48·83	6 7 0·0	129·87
21	22 20 43·40	5 54 0·8	129·97
22	22 22 37·76	5 41 0·9	130·07
23	22 24 31·91	5 28 0·5	130·15
24	22 26 25·85	S. 5 14 59·6	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 27.		
	h m s	° ′ ″	″
0	22 26 25·85	S. 5 14 59·6	130·23
1	22 28 19·60	5 1 58·2	130·30
2	22 30 13·16	4 48 56·4	130·36
3	22 32 6·53	4 35 54·2	130·42
4	22 33 59·71	4 22 51·7	130·46
5	22 35 52·71	4 9 48·9	130·50
6	22 37 45·53	3 56 45·9	130·53
7	22 39 38·18	3 43 42·7	130·55
8	22 41 30·67	3 30 39·4	130·56
9	22 43 22·99	3 17 36·1	130·57
10	22 45 15·15	3 4 32·7	130·56
11	22 47 7·16	2 51 29·3	130·55
12	22 48 59·02	2 38 26·0	130·53
13	22 50 50·73	2 25 22·8	130·51
14	22 52 42·30	2 12 19·8	130·47
15	22 54 33·74	1 59 17·0	130·43
16	22 56 25·05	1 46 14·4	130·38
17	22 58 16·22	1 33 12·1	130·33
18	23 0 7·27	1 20 10·1	130·26
19	23 1 58·21	1 7 8·5	130·19
20	23 3 49·03	0 54 7·4	130·11
21	23 5 39·74	0 41 6·7	130·02
22	23 7 30·34	0 28 6·6	129·93
23	23 9 20·84	S. 0 15 7·0	129·83
	FRIDAY 28.		
0	23 11 11·25	S. 0 2 8·0	129·72
1	23 13 1·56	N. 0 10 50·3	129·61
2	23 14 51·79	0 23 48·0	129·49
3	23 16 41·93	0 36 44·9	129·36
4	23 18 31·99	0 49 41·1	129·23
5	23 20 21·98	1 2 36·5	129·08
6	23 22 11·89	1 15 31·0	128·94
7	23 24 1·74	1 28 24·6	128·78
8	23 25 51·53	1 41 17·3	128·62
9	23 27 41·26	1 54 9·0	128·46
10	23 29 30·93	2 6 59·8	128·28
11	23 31 20·56	2 19 49·5	128·10
12	23 33 10·14	2 32 38·1	127·91
13	23 34 59·68	2 45 25·6	127·72
14	23 36 49·18	2 58 11·9	127·52
15	23 38 38·64	3 10 57·0	127·31
16	23 40 28·08	3 23 40·9	127·10
17	23 42 17·50	3 36 23·5	126·88
18	23 44 6·89	3 49 4·8	126·66
19	23 45 56·27	4 1 44·8	126·43
20	23 47 45·64	4 14 23·4	126·19
21	23 49 34·99	4 27 0·5	125·94
22	23 51 24·35	4 39 36·2	125·69
23	23 53 13·70	4 52 10·3	125·43
24	23 55 3·06	N. 5 4 42·9	

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MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 29.				*SUNDAY* 30.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	23 55 3·06	N. 5 4 42·9	125·17	0	0 38 59·33	N. 9 56 26·6	117·00
1	23 56 52·43	5 17 13·9	124·90	1	0 40 50·08	10 8 8·6	116·58
2	23 58 41·81	5 29 43·3	124·63	2	0 42 40·93	10 19 48·1	116·16
3	0 0 31·21	5 42 11·1	124·35	3	0 44 31·89	10 31 25·0	115·73
4	0 2 20·62	5 54 37·2	124·06	4	0 46 22·97	10 42 59·4	115·29
5	0 4 10·06	6 7 1·5	123·76	5	0 48 14·16	10 54 31·2	114·85
6	0 5 59·53	6 19 24·1	123·46	6	0 50 5·47	11 6 0·3	114·40
7	0 7 49·03	6 31 44·9	123·16	7	0 51 56·90	11 17 26·7	113·95
8	0 9 38·57	6 44 3·8	122·85	8	0 53 48·45	11 28 50·3	113·48
9	0 11 28·15	6 56 20·9	122·53	9	0 55 40·14	11 40 11·2	113·01
10	0 13 17·78	7 8 36·1	122·20	10	0 57 31·96	11 51 29·3	112·54
11	0 15 7·45	7 20 49·3	121·87	11	0 59 23·92	12 2 44·5	112·05
12	0 16 57·17	7 33 0·5	121·53	12	1 1 16·01	12 13 56·8	111·56
13	0 18 46·95	7 45 9·7	121·19	13	1 3 8·25	12 25 6·2	111·07
14	0 20 36·79	7 57 16·8	120·84	14	1 5 0·64	12 36 12·6	110·57
15	0 22 26·70	8 9 21·8	120·48	15	1 6 53·18	12 47 16·0	110·06
16	0 24 16·67	8 21 24·7	120·12	16	1 8 45·87	12 58 16·4	109·55
17	0 26 6·71	8 33 25·4	119·75	17	1 10 38·71	13 9 13·7	109·03
18	0 27 56·83	8 45 23·9	119·38	18	1 12 31·72	13 20 7·8	108·50
19	0 29 47·03	8 57 20·2	119·00	19	1 14 24·89	13 30 58·8	107·96
20	0 31 37·31	9 9 14·2	118·61	20	1 16 18·22	13 41 46·6	107·42
21	0 33 27·67	9 21 5·9	118·22	21	1 18 11·73	13 52 31·1	106·87
22	0 35 18·13	9 32 55·2	117·82	22	1 20 5·41	14 3 12·3	106·31
23	0 37 8·68	9 44 42·1	117·42	23	1 21 59·26	14 13 50·2	105·75
24	0 38 59·33	N. 9 56 26·6		24	1 23 53·29	N.14 24 24·7	

PHASES OF THE MOON.

		d	h	m
●	New Moon	8	1	38·2
☽	*First Quarter*	15	10	15·6
○	Full Moon	22	2	22·7
☾	*Last Quarter*	29	14	40·4

		d	h
☾	Apogee	3	10
☾	Perigee	19	4

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month	Star's Name and Position,	Noon.	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	α Aquilæ W.	55 36 20	3846	56 50 35	3825	58 5 12	3806	59 20 8	3788
	Fomalhaut W.	33 3 17	4921	34 1 15	4783	35 1 5	4660	36 2 38	4552
	α Arietis E.	42 51 48	3065	41 22 56	3074	39 54 15	3083	38 25 45	3092
	Sun E.	78 10 24	3393	76 48 0	3400	75 25 44	3407	74 3 36	3414
2	α Aquilæ W.	65 38 58	3718	66 55 26	3707	68 12 5	3696	69 28 56	3687
	Fomalhaut W.	41 31 8	4160	42 40 12	4103	43 50 11	4050	45 1 1	4004
	α Arietis E.	31 5 54	3136	29 38 28	3146	28 11 14	3156	26 44 12	3167
	Sun E.	67 14 32	3438	65 52 58	3441	64 31 28	3445	63 10 2	3447
3	α Aquilæ W.	75 55 33	3646	77 13 18	3639	78 31 10	3633	79 49 9	3626
	Fomalhaut W.	51 5 41	3819	52 20 24	3790	53 35 37	3763	54 51 18	3737
	α Pegasi W.	28 13 5	3771	29 28 37	3711	30 45 12	3658	32 2 44	3611
	Sun E.	56 23 21	3452	55 2 3	3453	53 40 46	3452	52 19 28	3451
4	α Aquilæ W.	86 20 38	3600	87 39 12	3596	88 57 51	3592	90 16 34	3589
	Fomalhaut W.	61 15 56	3630	62 33 58	3613	63 52 18	3595	65 10 58	3579
	α Pegasi W.	38 41 29	3440	40 3 0	3415	41 24 59	3392	42 47 25	3370
	Sun E.	45 32 32	3440	44 11 1	3438	42 49 27	3434	41 27 49	3430
5	α Aquilæ W.	96 51 0	3575	98 10 1	3574	99 29 4	3574	100 48 7	3573
	Fomalhaut W.	71 48 29	3507	73 8 45	3494	74 29 16	3482	75 50 0	3470
	α Pegasi W.	49 45 21	3279	51 9 57	3264	52 34 51	3249	54 0 3	3235
	Sun E.	34 38 29	3408	33 16 21	3403	31 54 8	3398	30 31 49	3393
10	Sun W.	22 27 34	3074	23 56 16	3062	25 25 12	3050	26 54 23	3038
	Jupiter E.	39 47 41	2797	38 13 9	2791	36 38 29	2785	35 3 41	2778
	Regulus E.	45 55 47	2739	44 19 59	2731	42 44 1	2724	41 7 53	2717
	Saturn E.	51 52 20	2775	50 17 19	2768	48 42 9	2760	47 6 49	2754
	Spica E.	99 56 17	2723	98 20 8	2714	96 43 47	2706	95 7 15	2697
11	Sun W.	34 23 42	2985	35 54 14	2975	37 24 58	2965	38 55 55	2954
	Jupiter E.	27 7 54	2758	25 32 31	2756	23 57 5	2756	22 21 40	2759
	Regulus E.	33 4 59	2686	31 28 0	2681	29 50 54	2677	28 13 43	2673
	Saturn E.	39 8 9	2726	37 32 3	2722	35 55 52	2718	34 19 36	2715
	Spica E.	87 1 35	2652	85 23 51	2644	83 45 56	2635	82 7 48	2627
12	Sun W.	46 33 52	2904	48 6 5	2894	49 38 31	2884	51 11 10	2875
	Mars W.	22 29 39	2795	24 4 13	2785	25 39 0	2776	27 14 0	2766
	Saturn E.	26 17 49	2720	24 41 36	2728	23 5 34	2740	21 29 47	2757
	Spica E.	73 54 12	2582	72 14 53	2573	70 35 21	2565	68 55 38	2556
	Antares E.	119 33 32	2577	117 54 5	2568	116 14 26	2559	114 34 35	2550
13	Sun W.	58 57 33	2825	60 31 28	2815	62 5 36	2805	63 39 57	2796
	Mars W.	35 12 13	2717	36 48 30	2707	38 25 1	2698	40 1 44	2689
	Spica E.	60 34 0	2512	58 53 4	2504	57 11 56	2495	55 30 35	2487
	Antares E.	106 12 12	2505	104 31 6	2496	102 49 47	2487	101 8 16	2478
14	Sun W.	71 34 54	2746	73 10 33	2737	74 46 24	2727	76 22 28	2717
	Mars W.	48 8 32	2640	49 46 33	2630	51 24 47	2621	53 3 13	2611
	Spica E.	47 0 53	2444	45 18 21	2436	43 35 37	2428	41 52 42	2419
	Antares E.	92 37 27	2433	90 54 39	2424	89 11 38	2415	87 28 24	2406
15	Sun W.	84 26 5	2668	86 3 27	2658	87 41 3	2650	89 18 50	2640
	Mars W.	61 18 40	2564	62 58 25	2555	64 38 22	2546	66 18 32	2537

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Midnight.	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	α Aquilæ W.	60 35 23	3772	61 50 54	3757	63 6 41	3743	64 22 43	3731
	Fomalhaut W.	37 5 44	4456	38 10 15	4369	39 16 4	4292	40 23 4	4223
	α Arietis E.	36 57 25	3101	35 29 16	3110	34 1 18	3119	32 33 31	3127
	Sun E.	72 41 35	3420	71 19 41	3425	69 57 53	3430	68 36 10	3434
2	α Aquilæ W.	70 45 57	3678	72 3 8	3669	73 20 28	3662	74 37 56	3653
	Fomalhaut W.	46 12 37	3960	47 24 56	3920	48 37 55	3884	49 51 31	3851
	α Arietis E.	25 17 24	3180	23 50 51	3194	22 24 34	3210	20 58 37	3230
	Sun E.	61 48 38	3449	60 27 17	3450	59 5 57	3451	57 44 38	3453
3	α Aquilæ W.	81 7 15	3621	82 25 27	3615	83 43 45	3610	85 2 9	3605
	Fomalhaut W.	56 7 26	3713	57 23 59	3691	58 40 56	3670	59 58 15	3649
	α Pegasi W.	33 21 7	3570	34 40 14	3532	36 0 3	3498	37 20 29	3468
	Sun E.	50 58 9	3449	49 36 48	3447	48 15 25	3446	46 54 0	3443
4	α Aquilæ W.	91 35 20	3585	92 54 11	3582	94 13 5	3580	95 32 1	3577
	Fomalhaut W.	66 29 55	3564	67 49 9	3548	69 8 40	3534	70 28 27	3520
	α Pegasi W.	44 10 16	3349	45 33 31	3331	46 57 7	3313	48 21 4	3295
	Sun E.	40 6 6	3427	38 44 20	3422	37 22 28	3417	36 0 31	3413
5	α Aquilæ W.	102 7 11	3573	103 26 15	3574	104 45 18	3575	106 4 19	3576
	Fomalhaut W.	77 10 58	3458	78 32 9	3447	79 53 32	3437	81 15 7	3427
	α Pegasi W.	55 25 31	3220	56 51 16	3207	58 17 17	3194	59 43 33	3182
	Sun E.	29 9 24	3386	27 46 52	3381	26 24 14	3376	25 1 30	3371
10	Sun W.	28 23 48	3027	29 53 27	3017	31 23 19	3006	32 53 24	2996
	Jupiter E.	33 28 44	2773	31 53 41	2768	30 18 31	2763	28 43 15	2760
	Regulus E.	39 31 36	2710	37 55 10	2704	36 18 35	2697	34 41 51	2691
	Saturn E.	45 31 21	2748	43 55 45	2741	42 20 0	2736	40 44 8	2731
	Spica E.	93 30 31	2688	91 53 35	2679	90 16 27	2670	88 39 7	2661
11	Sun W.	40 27 5	2944	41 58 28	2935	43 30 3	2924	45 1 51	2914
	Jupiter E.	20 46 19	2766	19 11 6	2776	17 36 6	2791	16 1 26	2811
	Regulus E.	26 36 27	2671	24 59 8	2670	23 21 47	2671	21 44 28	2674
	Saturn E.	32 43 16	2713	31 6 54	2712	29 30 30	2713	27 54 8	2716
	Spica E.	80 29 29	2618	78 50 58	2608	77 12 14	2600	75 33 19	2591
12	Sun W.	52 44 1	2865	54 17 5	2855	55 50 22	2845	57 23 51	2835
	Mars W.	28 49 12	2756	30 24 38	2746	32 0 17	2736	33 36 9	2727
	Saturn E.	19 54 22	2780	18 19 28	2814	16 45 18	2861	15 12 9	2928
	Spica E.	67 15 43	2547	65 35 35	2538	63 55 15	2530	62 14 44	2521
	Antares E.	112 54 31	2541	111 14 15	2532	109 33 47	2523	107 53 6	2514
13	Sun W.	65 14 30	2785	66 49 17	2776	68 24 16	2766	69 59 29	2756
	Mars W.	41 38 39	2678	43 15 48	2669	44 53 10	2659	46 30 45	2650
	Spica E.	53 49 3	2478	52 7 19	2469	50 25 22	2461	48 43 14	2452
	Antares E.	99 26 32	2469	97 44 35	2460	96 2 25	2451	94 20 3	2441
14	Sun W.	77 58 45	2707	79 35 16	2698	81 11 59	2687	82 48 56	2678
	Mars W.	54 41 53	2602	56 20 45	2592	57 59 51	2583	59 39 9	2574
	Spica E.	40 9 35	2412	38 26 17	2404	36 42 48	2396	34 59 8	2389
	Antares E.	85 44 58	2396	84 1 18	2388	82 17 26	2378	80 33 20	2370
15	Sun W.	90 56 51	2630	92 35 5	2621	94 13 31	2613	95 52 9	2604
	Mars W.	67 58 54	2527	69 39 29	2518	71 20 17	2510	73 1 17	2501

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	*Noon.*	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
15	Jupiter W.	26 46 21	2465	28 28 24	2450	30 10 48	2436	31 53 32	2424
	Regulus W.	21 25 42	2439	23 8 21	2419	24 51 28	2402	26 34 59	2386
	Saturn W.	15 56 44	2669	17 34 6	2610	19 12 48	2563	20 52 34	2525
	Spica E.	33 15 18	2382	31 31 18	2375	29 47 8	2370	28 2 50	2365
	Antares E.	78 49 2	2361	77 4 31	2352	75 19 47	2344	73 34 51	2334
	α Aquilæ E.	127 44 52	3260	126 19 54	3212	124 53 59	3167	123 27 11	3125
16	Sun W.	97 30 59	2594	99 10 2	2585	100 49 17	2577	102 28 43	2568
	Mars W.	74 42 29	2492	76 23 53	2484	78 5 29	2475	79 47 17	2467
	Jupiter W.	40 31 27	2367	42 15 49	2357	44 0 25	2348	45 45 15	2338
	Regulus W.	35 17 44	2323	37 3 10	2313	38 48 51	2302	40 34 47	2292
	Saturn W.	29 22 18	2403	31 5 49	2385	32 49 45	2370	34 34 3	2356
	Antares E.	64 47 1	2292	63 0 50	2285	61 14 28	2277	59 27 54	2268
	α Aquilæ E.	116 1 38	2958	114 30 32	2931	112 58 53	2907	111 26 43	2883
17	Sun W.	110 48 47	2529	112 29 20	2522	114 10 2	2515	115 50 55	2509
	Mars W.	88 19 6	2429	90 2 0	2422	91 45 4	2415	93 28 17	2408
	Jupiter W.	54 32 39	2297	56 18 43	2289	58 4 59	2282	59 51 25	2276
	Regulus W.	49 27 53	2249	51 15 8	2241	53 2 34	2235	54 50 10	2227
	Saturn W.	43 20 13	2298	45 6 15	2289	46 52 31	2280	48 39 0	2271
	Antares E.	50 32 16	2233	48 44 37	2226	46 56 48	2219	45 8 49	2214
	α Aquilæ E.	103 39 4	2791	102 4 25	2776	100 29 26	2764	98 54 11	2753
18	Sun W.	124 17 28	2480	125 59 10	2475	127 40 59	2471	129 22 53	2467
	Mars W.	102 6 35	2381	103 50 37	2376	105 34 46	2372	107 19 1	2368
	Jupiter W.	68 45 54	2246	70 33 13	2242	72 20 38	2238	74 8 9	2234
	Regulus W.	63 50 40	2198	65 39 11	2193	67 27 49	2188	69 16 34	2184
	Saturn W.	57 34 18	2237	59 21 51	2231	61 9 32	2226	62 57 21	2222
	Antares E.	36 6 51	2188	34 18 6	2184	32 29 14	2181	30 40 18	2177
	α Aquilæ E.	90 54 38	2714	89 18 16	2709	87 41 48	2706	86 5 16	2705
	Fomalhaut E.	115 57 37	2718	114 21 20	2698	112 44 37	2680	111 7 31	2665
19	Mars W.	116 1 25	2356	117 46 3	2355	119 30 43	2354	121 15 24	2354
	Jupiter W.	83 7 2	2221	84 54 59	2220	86 42 57	2219	88 30 57	2219
	Regulus W.	78 21 36	2171	80 10 47	2170	82 0 0	2169	83 49 15	2168
	Saturn W.	71 57 51	2206	73 46 9	2204	75 34 30	2203	77 22 53	2203
	Spica W.	24 21 15	2196	26 9 49	2190	27 58 31	2186	29 47 20	2183
	α Aquilæ E.	78 2 50	2720	76 26 36	2727	74 50 32	2736	73 14 40	2747
	Fomalhaut E.	102 57 23	2609	101 18 40	2602	99 39 47	2596	98 0 47	2592
	α Pegasi E.	124 44 54	2367	123 0 32	2358	121 15 56	2350	119 31 9	2342
20	Jupiter W.	97 30 43	2225	99 18 33	2228	101 6 19	2232	102 53 59	2236
	Regulus W.	92 55 20	2174	94 44 26	2177	96 33 28	2180	98 22 25	2184
	Saturn W.	86 24 41	2208	88 12 56	2211	90 1 8	2214	91 49 14	2218
	Spica W.	38 52 11	2180	40 41 9	2181	42 30 6	2183	44 18 59	2186
	α Aquilæ E.	65 19 49	2832	63 46 3	2856	62 12 48	2883	60 40 8	2913
	Fomalhaut E.	89 44 56	2590	88 5 48	2594	86 26 45	2599	84 47 49	2605
	α Pegasi E.	110 45 8	2323	108 59 42	2323	107 14 16	2322	105 28 49	2324
21	Jupiter W.	111 50 37	2264	113 37 30	2271	115 24 12	2279	117 10 42	2287
	Regulus W.	107 25 29	2211	109 13 40	2218	111 1 40	2226	112 49 29	2234
	Saturn W.	100 48 5	2245	102 35 25	2253	104 22 34	2260	106 9 32	2268
	Spica W.	53 22 5	2203	55 10 20	2215	56 58 25	2222	58 46 20	2230

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LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
15	Jupiter	W.	33 36 33	2411	35 19 52	2399	37 3 28	2389	38 47 19	2377
	Regulus	W.	28 18 54	2373	30 3 8	2359	31 47 42	2346	33 32 35	2335
	Saturn	W.	22 33 13	2493	24 14 36	2465	25 56 38	2442	27 39 13	2421
	Spica	E.	26 18 25	2360	24 33 53	2357	22 49 17	2355	21 4 38	2355
	Antares	E.	71 49 41	2326	70 4 20	2318	68 18 46	2309	66 33 0	2300
	α Aquilæ	E.	121 59 32	3087	120 31 7	3051	119 1 57	3018	117 32 7	2987
16	Sun	W.	104 8 22	2560	105 48 12	2552	107 28 13	2545	109 8 24	2536
	Mars	W.	81 29 17	2459	83 11 28	2451	84 53 50	2443	86 36 23	2436
	Jupiter	W.	47 30 19	2329	49 15 36	2321	51 1 5	2313	52 46 46	2304
	Regulus	W.	42 20 58	2283	44 7 22	2274	45 54 0	2266	47 40 50	2257
	Saturn	W.	36 18 41	2343	38 3 38	2331	39 48 53	2319	41 34 25	2308
	Antares	E.	57 41 8	2261	55 54 11	2254	54 7 3	2247	52 19 45	2239
	α Aquilæ	E.	109 54 2	2862	108 20 54	2842	106 47 21	2824	105 13 24	2806
17	Sun	W.	117 31 56	2502	119 13 7	2496	120 54 26	2490	122 35 54	2485
	Mars	W.	95 11 40	2403	96 55 11	2396	98 38 51	2391	100 22 39	2385
	Jupiter	W.	61 38 0	2269	63 24 46	2263	65 11 40	2257	66 58 43	2251
	Regulus	W.	56 37 57	2220	58 25 54	2214	60 14 1	2208	62 2 16	2202
	Saturn	W.	50 25 42	2264	52 12 35	2256	53 59 39	2249	55 46 54	2243
	Antares	E.	43 20 42	2208	41 32 26	2202	39 44 2	2197	37 55 30	2192
	α Aquilæ	E.	97 18 41	2742	95 42 56	2733	94 7 0	2725	92 30 53	2719
18	Sun	W.	131 4 53	2463	132 46 58	2460	134 29 7	2457	136 11 20	2455
	Mars	W.	109 3 21	2365	110 47 46	2362	112 32 16	2359	114 16 49	2357
	Jupiter	W.	75 55 47	2231	77 43 29	2227	79 31 17	2224	81 19 8	2222
	Regulus	W.	71 5 25	2181	72 54 21	2177	74 43 23	2175	76 32 28	2173
	Saturn	W.	64 45 16	2218	66 33 17	2214	68 21 24	2211	70 9 36	2208
	Antares	E.	28 51 16	2175	27 2 11	2173	25 13 3	2171	23 23 52	2170
	α Aquilæ	E.	84 28 43	2705	82 52 10	2707	81 15 39	2709	79 39 11	2714
	Fomalhaut	E.	109 30 4	2651	107 52 18	2638	106 14 14	2627	104 35 55	2617
19	Mars	W.	123 0 5	2354	124 44 46	2355	126 29 25	2357	128 14 2	2359
	Jupiter	W.	90 18 56	2219	92 6 56	2220	93 54 54	2221	95 42 50	2223
	Regulus	W.	85 38 30	2168	87 27 45	2169	89 16 59	2171	91 6 10	2172
	Saturn	W.	79 11 16	2203	80 59 39	2204	82 48 1	2204	84 36 22	2206
	Spica	W.	31 36 13	2180	33 25 11	2179	35 14 10	2178	37 3 11	2178
	α Aquilæ	E.	71 39 3	2760	70 3 42	2775	68 28 41	2792	66 54 3	2811
	Fomalhaut	E.	96 21 41	2589	94 42 31	2588	93 3 19	2588	91 24 7	2588
	α Pegasi	E.	117 46 11	2336	116 1 4	2331	114 15 50	2328	112 30 31	2325
20	Jupiter	W.	104 41 34	2241	106 29 1	2245	108 16 22	2251	110 3 34	2257
	Regulus	W.	100 11 16	2188	102 0 1	2193	103 48 39	2199	105 37 8	2204
	Saturn	W.	93 37 15	2222	95 25 9	2227	97 12 56	2233	99 0 35	2239
	Spica	W.	46 7 48	2189	47 56 32	2193	49 45 11	2198	51 33 42	2203
	α Aquilæ	E.	59 8 6	2946	57 36 45	2982	56 6 10	3022	54 36 25	3067
	Fomalhaut	E.	83 9 1	2613	81 30 23	2622	79 51 58	2632	78 13 46	2643
	α Pegasi	E.	103 43 24	2325	101 58 1	2328	100 12 43	2331	98 27 29	2336
21	Jupiter	W.	118 57 0	2296	120 43 5	2306	122 28 55	2315	124 14 32	2326
	Regulus	W.	114 37 6	2243	116 24 30	2252	118 11 40	2262	119 58 36	2272
	Saturn	W.	107 56 18	2278	109 42 50	2287	111 29 9	2297	113 15 13	2307
	Spica	W.	60 34 3	2237	62 21 35	2245	64 8 55	2255	65 56 1	2264

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LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
21	α Aquilæ E.	53 7 35	3116	51 39 44	3170	50 12 59	3230	48 47 25	3296
	Fomalhaut E.	76 35 50	2657	74 58 12	2671	73 20 54	2687	71 43 57	2706
	α Pegasi E.	96 42 22	2341	94 57 23	2347	93 12 32	2354	91 27 50	2362
22	Saturn W.	115 1 2	2319	116 46 34	2330	118 31 50	2342	120 16 48	2355
	Spica W.	67 42 53	2274	69 29 31	2285	71 15 53	2296	73 1 59	2307
	Antares W.	22 2 6	2276	23 48 41	2285	25 35 2	2295	27 21 9	2306
	Fomalhaut E.	63 45 54	2821	62 11 53	2650	60 38 30	2881	59 5 47	2915
	α Pegasi E.	82 47 29	2410	81 4 9	2422	79 21 6	2435	77 38 21	2448
	α Arietis E.	125 42 4	2292	123 55 52	2302	122 9 55	2311	120 24 12	2322
23	Spica W.	81 48 13	2369	83 32 32	2382	85 16 32	2396	87 0 12	2411
	Antares W.	36 7 34	2366	37 51 58	2380	39 36 2	2394	41 19 46	2407
	Fomalhaut E.	51 34 2	3129	50 6 28	3183	48 39 58	3241	47 14 37	3304
	α Pegasi E.	69 9 40	2526	67 29 3	2544	65 48 51	2563	64 9 5	2582
	α Arietis E.	111 39 43	2382	109 55 42	2395	108 12 0	2409	106 28 38	2422
24	Spica W.	95 33 21	2485	97 14 55	2501	98 56 7	2516	100 36 58	2532
	Antares W.	49 53 23	2481	51 35 3	2496	53 16 22	2512	54 57 18	2527
	Fomalhaut E.	40 28 22	3722	39 11 58	3832	37 57 29	3954	36 45 4	4091
	α Pegasi E.	55 57 10	2691	54 20 18	2716	52 43 59	2741	51 8 14	2769
	α Arietis E.	97 56 48	2496	96 15 29	2512	94 34 32	2527	92 53 56	2543
25	Spica W.	108 55 37	2613	110 34 15	2629	112 12 30	2645	113 50 24	2661
	Antares W.	63 16 34	2607	64 55 19	2623	66 33 43	2639	68 11 45	2655
	α Pegasi E.	43 18 56	2926	41 47 10	2963	40 16 11	3003	38 46 2	3046
	α Arietis E.	84 36 25	2623	82 58 1	2639	81 19 59	2655	79 42 18	2671
26	Antares W.	76 16 34	2733	77 52 30	2749	79 28 5	2763	81 3 21	2779
	α Pegasi E.	31 29 57	3326	30 6 16	3401	28 44 1	3487	27 23 22	3584
	α Arietis E.	71 39 20	2751	70 3 48	2766	68 28 36	2782	66 53 45	2798
	Sun E.	130 55 48	3068	129 26 59	3084	127 58 30	3101	126 30 21	3117
27	Antares W.	88 54 51	2849	90 28 15	2863	92 1 21	2876	93 34 11	2889
	α Aquilæ W.	42 45 0	4183	43 53 42	4122	45 3 22	4068	46 13 55	4020
	α Arietis E.	59 4 25	2872	57 31 30	2886	55 58 53	2900	54 26 34	2913
	Sun E.	119 14 22	3193	117 48 4	3208	116 22 4	3221	114 56 20	3235
28	Antares W.	101 14 25	2946	102 45 45	2957	104 16 51	2967	105 47 45	2977
	α Aquilæ W.	52 16 58	3848	53 31 11	3823	54 45 50	3800	56 0 52	3781
	Fomalhaut W.	30 43 49	5339	31 36 28	5143	32 31 33	4972	33 28 50	4822
	α Arietis E.	46 49 13	2978	45 18 33	2990	43 48 8	3003	42 17 59	3014
	Sun E.	107 51 36	3298	106 27 22	3309	105 3 21	3320	103 39 33	3331
29	Antares W.	113 19 22	3019	114 49 11	3026	116 18 52	3033	117 48 24	3038
	α Aquilæ W.	62 20 31	3708	63 37 10	3697	64 54 0	3687	66 11 1	3678
	Fomalhaut W.	38 41 51	4303	39 48 41	4230	40 56 39	4166	42 5 38	4108
	α Arietis E.	34 50 47	3072	33 22 3	3083	31 53 33	3095	30 25 17	3107
	Sun E.	96 43 24	3376	95 20 40	3383	93 58 4	3391	92 35 37	3397
30	α Aquilæ W.	72 38 12	3643	73 56 0	3638	75 13 53	3633	76 31 52	3628
	Fomalhaut W.	48 3 0	3889	49 16 31	3855	50 30 37	3825	51 45 13	3796
	α Pegasi W.	25 5 53	3941	26 18 31	3856	27 32 36	3784	28 47 55	3722
	Sun E.	85 45 0	3422	84 23 9	3425	83 1 21	3429	81 39 37	3431

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
21	α Aquilæ E.	47 23 8	3368	46 0 15	3449	44 38 54	3538	43 19 12	3637
	Fomalhaut E.	70 7 25	2725	68 31 18	2746	66 55 39	2769	65 20 30	2794
	α Pegasi E.	89 43 20	2370	87 59 2	2379	86 14 57	2389	84 31 6	2399
22	Saturn W.	122 1 28	2368	123 45 49	2382	125 29 50	2396	127 13 30	2410
	Spica W.	74 47 49	2318	76 33 22	2330	78 18 37	2343	80 3 34	2355
	Antares W.	29 7 0	2317	30 52 35	2329	32 37 52	2341	34 22 52	2353
	Fomalhaut E.	57 33 47	2951	56 2 33	2991	54 32 9	3033	53 2 37	3079
	α Pegasi E.	75 55 55	2462	74 13 49	2477	72 32 4	2493	70 50 41	2509
	α Arietis E.	118 38 45	2333	116 53 34	2344	115 8 39	2357	113 24 2	2369
23	Spica W.	88 43 31	2425	90 26 30	2439	92 9 9	2455	93 51 26	2470
	Antares W.	43 3 11	2421	44 46 15	2436	46 28 59	2450	48 11 22	2466
	Fomalhaut E.	45 50 30	3374	44 27 44	3449	43 6 22	3531	41 46 32	3622
	α Pegasi E.	62 29 45	2602	60 50 52	2623	59 12 28	2645	57 34 34	2667
	α Arietis E.	104 45 35	2436	103 2 52	2451	101 20 30	2466	99 38 29	2480
24	Spica W.	102 17 26	2548	103 57 32	2564	105 37 16	2580	107 16 38	2597
	Antares W.	56 37 53	2543	58 18 6	2559	59 57 57	2575	61 37 26	2591
	Fomalhaut E.	35 34 53	4244	34 27 8	4415	33 22 0	4607	32 19 41	4826
	α Pegasi E.	49 33 5	2797	47 58 33	2827	46 24 40	2857	44 51 26	2891
	α Arietis E.	91 13 42	2558	89 33 50	2574	87 54 20	2590	86 15 11	2607
25	Spica W.	115 27 56	2678	117 5 5	2693	118 41 54	2710	120 18 21	2726
	Antares W.	69 49 25	2671	71 26 44	2686	73 3 42	2702	74 40 19	2719
	α Pegasi E.	37 16 46	3092	35 48 27	3143	34 21 9	3198	32 54 57	3259
	α Arietis E.	78 4 59	2687	76 28 2	2704	74 51 27	2720	73 15 13	2735
26	Antares W.	82 38 16	2793	84 12 53	2808	85 47 11	2822	87 21 10	2836
	α Pegasi E.	26 4 30	3695	24 47 38	3825	23 33 2	3977	22 20 59	4158
	α Arietis E.	65 19 14	2813	63 45 3	2828	62 11 11	2843	60 37 39	2857
	Sun E.	125 2 32	3133	123 35 2	3148	122 7 50	3163	120 40 57	3178
27	Antares W.	95 6 44	2901	96 39 2	2913	98 11 4	2924	99 42 52	2936
	α Aquilæ W.	47 25 15	3977	48 37 17	3939	49 49 57	3904	51 3 12	3874
	α Arietis E.	52 54 32	2927	51 22 48	2940	49 51 20	2953	48 20 8	2966
	Sun E.	113 30 53	3248	112 5 41	3262	110 40 45	3274	109 16 3	3287
28	Antares W.	107 18 26	2986	108 48 56	2995	110 19 15	3004	111 49 23	3011
	α Aquilæ W.	57 16 14	3764	58 31 54	3747	59 47 52	3733	61 4 4	3719
	Fomalhaut W.	34 28 8	4691	35 29 15	4576	36 32 0	4474	37 36 15	4384
	α Arietis E.	40 48 4	3026	39 18 23	3038	37 48 57	3049	36 19 45	3061
	Sun E.	102 15 58	3340	100 52 33	3350	99 29 20	3359	98 6 17	3368
29	Antares W.	119 17 49	3044	120 47 7	3049	122 16 19	3054	123 45 25	3058
	α Aquilæ W.	67 28 11	3670	68 45 30	3663	70 2 57	3656	71 20 31	3649
	Fomalhaut W.	43 15 32	4055	44 26 18	4007	45 37 50	3964	46 50 5	3925
	α Arietis E.	28 57 16	3119	27 29 30	3133	26 2 0	3147	24 34 47	3162
	Sun E.	91 13 17	3403	89 51 4	3408	88 28 57	3414	87 6 56	3418
30	α Aquilæ W.	77 49 56	3623	79 8 5	3620	80 26 18	3615	81 44 36	3611
	Fomalhaut W.	53 0 19	3770	54 15 52	3746	55 31 50	3723	56 48 13	3702
	α Pegasi W.	30 4 19	3667	31 21 41	3619	32 39 55	3578	33 58 53	3541
	Sun E.	80 17 55	3433	78 56 16	3434	77 34 38	3435	76 13 1	3435

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Day of the Month.	Airy's Day Numbers—For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of E	F	G	H	Value of L
1	1·27910	0·75002	0·28572	1·36016	104·665
2	1·28585	0·74180	0·28651	1·36052	104·323
3	1·29253	0·73383	0·28730	1·36087	103·974
4	1·29914	0·72613	0·28810	1·36121	103·616
5	1·30568	0·71869	0·28889	1·36154	103·253
6	1·31215	0·71159	0·28968	1·36186	102·881
7	1·31855	0·70486	0·29048	1·36217	102·502
8	1·32488	0·69853	0·29128	1·36246	102·115
9	1·33114	0·69262	0·29208	1·36274	101·719
10	1·33733	0·68712	0·29288	1·36302	101·316
11	1·34345	0·68205	0·29368	1·36329	100·906
12	1·34949	0·67744	0·29448	1·36355	100·489
13	1·35547	0·67329	0·29528	1·36380	100·065
14	1·36138	0·66963	0·29608	1·36403	99·634
15	1·36721	0·66648	0·29688	1·36425	99·197
16	1·37298	0·66383	0·29768	1·36446	98·752
17	1·37868	0·66171	0·29848	1·36465	98·301
18	1·38430	0·66012	0·29928	1·36484	97·843
19	1·38986	0·65906	0·30007	1·36502	97·380
20	1·39535	0·65854	0·30087	1·36518	96·910
21	1·40077	0·65855	0·30167	1·36533	96·434
22	1·40612	0·65910	0·30246	1·36548	95·952
23	1·41140	0·66018	0·30325	1·36561	95·465
24	1·41662	0·66179	0·30404	1·36573	94·971
25	1·42177	0·66392	0·30483	1·36583	94·472
26	1·42686	0·66659	0·30561	1·36592	93·967
27	1·43188	0·66977	0·30639	1·36601	93·457
28	1·43683	0·67344	0·30717	1·36609	92·942
29	1·44172	0·67759	0·30795	1·36615	92·422
30	1·44654	0·68220	0·30872	1·36620	91·896
31	1·45129	0·68728	0·30949	1·36625	91·366

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Day of the Month.	Bessel's Day Numbers— For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of A	B	C	D	Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding $0^d.965193$. Days.	From Mea Noon of January Day of the Year.	Fraction of the Year.*
					h m s			
1	−0·7771	−1·2873	+9·8638	−0·3187	19 17 1·77	70	151	·41
2	0·7549	1·2897	9·8659	0·3147	19 13 5·86	71	152	·41
3	0·7314	1·2919	9·8679	0·3108	19 9 9·95	72	153	·41
4	−0·7065	−1·2940	+9·8700	−0·3070	19 5 14·04	73	154	·42
5	0·6799	1·2960	9·8721	0·3032	19 1 18·13	74	155	·42
6	0·6514	1·2978	9·8741	0·2996	18 57 22·21	75	156	·42
7	−0·6208	−1·2995	+9·8762	−0·2960	18 53 26·30	76	157	·42
8	0·5878	1·3011	9·8783	0·2925	18 49 30·39	77	158	·43
9	0·5520	1·3026	9·8804	0·2891	18 45 34·48	78	159	·43
10	−0·5128	−1·3039	+9·8824	−0·2858	18 41 38·57	79	160	·43
11	0·4695	1·3052	9·8845	0·2826	18 37 42·65	80	161	·44
12	0·4214	1·3063	9·8865	0·2795	18 33 46·74	81	162	·44
13	−0·3672	−1·3072	+9·8886	−0·2765	18 29 50·83	82	163	·44
14	0·3050	1·3081	9·8906	0·2736	18 25 54·92	83	164	·44
15	0·2324	1·3088	9·8926	0·2709	18 21 59·01	84	165	·45
16	−0·1450	−1·3094	+9·8947	−0·2683	18 18 3·09	85	166	·45
17	0·0353	1·3099	9·8967	0·2658	18 14 7·18	86	167	·45
18	9·8881	1·3102	9·8987	0·2635	18 10 11·27	87	168	·46
19	−9·6635	−1·3105	+9·9007	−0·2612	18 6 15·36	88	169	·46
20	−9·1722	1·3106	9·9027	0·2592	18 2 19·45	89	170	·46
21	+9·2135	1·3106	9·9047	0·2572	17 58 23·53	90	171	·46
22	+9·6772	−1·3105	+9·9067	−0·2554	17 54 27·62	91	172	·47
23	9·8962	1·3102	9·9086	0·2537	17 50 31·71	92	173	·47
24	0·0410	1·3098	9·9106	0·2522	17 46 35·80	93	174	·47
25	+0·1493	−1·3094	+9·9125	−0·2508	17 42 39·88	94	175	·47
26	0·2358	1·3088	9·9145	0·2495	17 38 43·97	95	176	·48
27	0·3079	1·3080	9·9164	0·2484	17 34 48·06	96	177	·48
28	+0·3695	−1·3072	+9·9183	−0·2474	17 30 52·15	97	178	·48
29	0·4234	1·3062	9·9202	0·2466	17 26 56·23	98	179	·49
30	0·4712	1·3051	9·9221	0·2459	17 23 0·32	99	180	·49
31	+0·5142	−1·3039	+9·9239	−0·2454	17 19 4·41	100	181	·49

* Add ·0031 if Fraction be required for the time t, see page 327.

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AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S *Apparent* Right Ascension.	Diff. for 1 hour.	THE SUN'S *Apparent* Declination.	Diff. for 1 hour.	Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, *to be added to Apparent Time.*	Diff. for 1 hour.
		h m s	s	° ′ ″	″	m s	m s	s
Mon.	1	6 41 34·62	10·335	N.23 6 50·1	10·78	1 8·76	3 29·17	0·478
Tues.	2	6 45 42·67	10·325	23 2 31·4	11·79	1 8·73	3 40·63	0·467
Wed.	3	6 49 50·46	10·313	22 57 48·5	12·79	1 8·69	3 51·82	0·455
Thur.	4	6 53 57·97	10·300	22 52 41·6	13·79	1 8·65	4 2·74	0·442
Frid.	5	6 58 5·17	10·286	22 47 10·7	14·78	1 8·60	4 13·35	0·428
Sat.	6	7 2 12·04	10·271	22 41 16·0	15·77	1 8·55	4 23·63	0·414
Sun.	7	7 6 18·57	10·256	22 34 57·5	16·75	1 8·50	4 33·57	0·399
Mon.	8	7 10 24·72	10·240	22 28 15·6	17·72	1 8·45	4 43·14	0·382
Tues.	9	7 14 30·47	10·222	22 21 10·5	18·68	1 8·39	4 52·30	0·365
Wed.	10	7 18 35·79	10·204	22 13 42·2	19·63	1 8·33	5 1·05	0·346
Thur.	11	7 22 40·68	10·185	22 5 50·9	20·58	1 8·27	5 9·35	0·327
Frid.	12	7 26 45·11	10·165	21 57 36·9	21·52	1 8·21	5 17·20	0·307
Sat.	13	7 30 49·06	10·144	21 49 0·4	22·45	1 8·14	5 24·57	0·287
Sun.	14	7 34 52·51	10·123	21 40 1·6	23·37	1 8·07	5 31·44	0·266
Mon.	15	7 38 55·45	10·101	21 30 40·6	24·29	1 8·00	5 37·81	0·244
Tues.	16	7 42 57·87	10·079	21 20 57·7	25·19	1 7·93	5 43·67	0·222
Wed.	17	7 46 59·76	10·056	21 10 53·1	26·08	1 7·86	5 48·99	0·199
Thur.	18	7 51 1·11	10·033	21 0 27·1	26·97	1 7·79	5 53·76	0·176
Frid.	19	7 55 1·90	10·010	20 49 39·8	27·85	1 7·71	5 57·98	0·153
Sat.	20	7 59 2·13	9·987	20 38 31·5	28·72	1 7·63	6 1·65	0·130
Sun.	21	8 3 1·80	9·963	20 27 2·4	29·57	1 7·55	6 4·75	0·106
Mon.	22	8 7 0·90	9·939	20 15 12·7	30·42	1 7·47	6 7·29	0·082
Tues.	23	8 10 59·42	9·915	20 3 2·6	31·25	1 7·39	6 9·25	0·058
Wed.	24	8 14 57·37	9·891	19 50 32·5	32·08	1 7·31	6 10·64	0·034
Thur.	25	8 18 54·75	9·867	19 37 42·5	32·90	1 7·22	6 11·46	0·010
Frid.	26	8 22 51·55	9·843	19 24 32·8	33·71	1 7·14	6 11·70	0·014
Sat.	27	8 26 47·77	9·818	19 11 3·8	34·50	1 7·05	6 11·36	0·039
Sun.	28	8 30 43·40	9·794	18 57 15·7	35·29	1 6·97	6 10·44	0·063
Mon.	29	8 34 38·45	9·770	18 43 8·8	36·06	1 6·88	6 8·94	0·087
Tues.	30	8 38 32·92	9·745	18 28 43·3	36·82	1 6·79	6 6·86	0·111
Wed.	31	8 42 26·80	9·720	18 13 59·4	37·58	1 6·70	6 4·19	0·136
Thur.	32	8 46 20·09		N.17 58 57·5		1 6·61	6 0·93	

*Mean Time of the Semidiameter passing may be found by subtracting 0ᵐ·19 from the *Sidereal* Time.

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AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S *Apparent* Right Ascension.	THE SUN'S *Apparent* Declination.	THE SUN'S Semidiam.*	Equation of Time *to be subtracted from Mean Time.*	Sidereal Time.
		h m s	° ′ ″	′ ″	m s	h m s
Mon.	1	6 41 34·03	N.23 6 50·7	15 45·9	3 29·13	6 38 4·90
Tues.	2	6 45 42·05	23 2 32·1	15 45·9	3 40·60	6 42 1·45
Wed.	3	6 49 49·80	22 57 49·4	15 45·9	3 51·79	6 45 58·01
Thur.	4	6 53 57·28	22 52 42·5	15 45·9	4 2·71	6 49 54·57
Frid.	5	6 58 4·45	22 47 11·7	15 45·9	4 13·32	6 53 51·13
Sat.	6	7 2 11·29	22 41 17·1	15 46·0	4 23·60	6 57 47·69
Sun.	7	7 6 17·79	22 34 58·8	15 46·0	4 33·54	7 1 44·25
Mon.	8	7 10 23·92	22 28 17·0	15 46·0	4 43·11	7 5 40·80
Tues.	9	7 14 29·64	22 21 12·0	15 46·0	4 52·27	7 9 37·36
Wed.	10	7 18 34·94	22 13 43·8	15 46·0	5 1·02	7 13 33·92
Thur.	11	7 22 39·80	22 5 52·7	15 46·1	5 9·33	7 17 30·48
Frid.	12	7 26 44·21	21 57 38·8	15 46·1	5 17·18	7 21 27·03
Sat.	13	7 30 48·14	21 49 2·4	15 46·2	5 24·55	7 25 23·59
Sun.	14	7 34 51·57	21 40 3·7	15 46·2	5 31·42	7 29 20·15
Mon.	15	7 38 54·50	21 30 42·9	15 46·3	5 37·79	7 33 16·71
Tues.	16	7 42 56·91	21 21 0·1	15 46·4	5 43·65	7 37 13·26
Wed.	17	7 46 58·79	21 10 55·6	15 46·5	5 48·96	7 41 9·82
Thur.	18	7 51 0·12	21 0 29·7	15 46·5	5 53·74	7 45 6·38
Frid.	19	7 55 0·90	20 49 42·6	15 46·6	5 57·97	7 49 2·94
Sat.	20	7 59 1·13	20 38 34·4	15 46·7	6 1·64	7 52 59·49
Sun.	21	8 3 0·79	20 27 5·4	15 46·8	6 4·74	7 56 56·05
Mon.	22	8 6 59·89	20 15 15·8	15 46·9	6 7·28	8 0 52·60
Tues.	23	8 10 58·41	20 3 5·9	15 47·0	6 9·24	8 4 49·16
Wed.	24	8 14 56·36	19 50 35·8	15 47·1	6 10·64	8 8 45·72
Thur.	25	8 18 53·73	19 37 45·9	15 47·2	6 11·46	8 12 42·28
Frid.	26	8 22 50·53	19 24 36·3	15 47·3	6 11·70	8 16 38·83
Sat.	27	8 26 46·75	19 11 7·4	15 47·4	6 11·36	8 20 35·39
Sun.	28	8 30 42·39	18 57 19·3	15 47·5	6 10·45	8 24 31·94
Mon.	29	8 34 37·45	18 43 12·5	15 47·6	6 8·95	8 28 28·50
Tues.	30	8 38 31·93	18 28 47·0	15 47·7	6 6·87	8 32 25·06
Wed.	31	8 42 25·82	18 14 3·2	15 47·8	6 4·20	8 36 21·62
Thur.	32	8 46 19·12	N.17 59 1·3	15 47·9	6 0·95	8 40 18·17

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

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MEAN TIME.

Day of the Month.	THE SUN'S *Apparent* Longitude. *Noon.*	THE SUN'S *Apparent* Latitude. *Noon.*	Logarithm of the Radius Vector of the Earth. *Noon.*	THE MOON'S Semidiameter. *Noon.*	THE MOON'S Semidiameter. *Midnight.*	THE MOON'S Horizontal Parallax. *Noon.*	THE MOON'S Horizontal Parallax. *Midnight.*
	° ′ ″	″		′ ″	′ ″	′ ″	′ ″
1	99 32 57·9	N.0·96	0·0072265	14 48·3	14 48·4	54 12·4	54 13·0
2	100 30 10·2	0·92	0·0072300	14 49·3	14 50·8	54 16·1	54 21·5
3	101 27 22·7	0·86	0·0072312	14 52·8	14 55·5	54 29·1	54 38·7
4	102 24 35·4	0·77	0·0072301	14 58·6	15 2·1	54 50·1	55 3·1
5	103 21 48·5	0·66	0·0072265	15 6·1	15 10·2	55 17·5	55 32·8
6	104 19 1·8	0·53	0·0072202	15 14·7	15 19·3	55 49·0	56 5·9
7	105 16 15·3	0·40	0·0072113	15 24·0	15 28·7	56 23·1	56 40·3
8	106 13 29·0	0·27	0·0071997	15 33·3	15 37·8	56 57·2	57 13·7
9	107 10 42·8	0·14	0·0071856	15 42·1	15 46·3	57 29·6	57 44·7
10	108 7 56·8	N.0·03	0·0071688	15 50·1	15 53·7	57 58·9	58 12·1
11	109 5 10·8	S.0·07	0·0071495	15 57·1	16 0·1	58 24·2	58 35·2
12	110 2 25·0	0·14	0·0071278	16 2·7	16 5·1	58 45·0	58 53·8
13	110 59 39·2	0·18	0·0071037	16 7·2	16 9·0	59 1·4	59 7·8
14	111 56 53·4	0·19	0·0070774	16 10·4	16 11·5	59 13·1	59 17·3
15	112 54 7·7	0·17	0·0070489	16 12·3	16 12·8	59 20·2	59 21·8
16	113 51 22·3	0·12	0·0070185	16 12·9	16 12·5	59 22·1	59 20·8
17	114 48 37·0	S.0·05	0·0069863	16 11·8	16 10·5	59 18·1	59 13·6
18	115 45 51·9	N.0·05	0·0069524	16 8·9	16 6·7	59 7·5	58 59·5
19	116 43 7·1	0·17	0·0069169	16 4·0	16 0·8	58 49·7	58 38·1
20	117 40 22·7	0·30	0·0068799	15 57·2	15 53·2	58 24·9	58 10·0
21	118 37 38·7	0·43	0·0068415	15 48·7	15 43·9	57 53·7	57 36·2
22	119 34 55·2	0·55	0·0068017	15 38·9	15 33·7	57 17·8	56 58·7
23	120 32 12·4	0·67	0·0067606	15 28·4	15 23·1	56 39·3	56 19·9
24	121 29 30·3	0·78	0·0067182	15 17·9	15 12·9	56 0·9	55 42·6
25	122 26 49·1	0·87	0·0066744	15 8·2	15 3·9	55 25·3	55 9·4
26	123 24 8·8	0·93	0·0066291	15 0·0	14 56·6	54 55·2	54 42·7
27	124 21 29·4	0·96	0·0065824	14 53·7	14 51·5	54 32·3	54 24·2
28	125 18 51·1	0·96	0·0065340	14 49·9	14 49·0	54 18·4	54 15·1
29	126 16 13·9	0·93	0·0064840	14 48·9	14 49·3	54 14·5	54 16·3
30	127 13 37·9	0·87	0·0064322	14 50·6	14 52·5	54 20·8	54 27·8
31	128 11 3·0	0·78	0·0063784	14 55·1	14 58·3	54 37·3	54 49·1
32	129 8 29·3	N.0·67	0·0063226	15 2·1	15 6·5	55 3·1	55 19·2

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MEAN TIME.

THE MOON'S

Day of the Week.	Day of the Month.	Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.	Age. Noon.	Meridian Passage.
		° ′ ″	° ′ ″	° ′ ″	° ′ ″	d	h m
Mon.	1	24 45 22·5	30 41 45·2	N.5 10 40·2	N.5 2 40·6	22·9	19 20·0
Tues.	2	36 38 36·4	42 36 27·4	4 51 25·8	4 37 0·3	23·9	20 6·0
Wed.	3	48 35 47·8	54 37 5·3	4 19 30·3	3 59 2·9	24·9	20 54·7
Thur.	4	60 40 45·5	66 47 11·1	3 35 46·7	3 9 52·9	25·9	21 46·0
Frid.	5	72 56 41·9	79 9 34·9	2 41 34·0	2 11 4·4	26·9	22 39·1
Sat.	6	85 26 3·6	91 46 18·3	1 38 42·7	N.1 4 48·5	27·9	23 33·0
Sun.	7	98 10 25·9	104 38 29·6	N.0 29 44·5	S.0 6 3·7	28·9	☌
Mon.	8	111 10 29·7	117 46 23·2	S.0 42 8·8	1 18 1·3	0·4	0 26·4
Tues.	9	124 26 4·3	131 9 24·6	1 53 10·3	2 27 4·2	1·4	1 18·3
Wed.	10	137 56 13·5	144 46 18·2	2 59 10·7	3 28 58·8	2·4	2 8·5
Thur.	11	151 39 24·8	158 35 17·8	3 55 58·5	4 19 41·6	3·4	2 57·3
Frid.	12	165 33 40·7	172 34 16·5	4 39 42·6	4 55 39·6	4·4	3 45·5
Sat.	13	179 36 47·7	186 40 56·8	5 7 14·6	5 14 13·2	5·4	4 34·0
Sun.	14	193 46 25·6	200 52 56·0	5 16 26·5	5 13 50·2	6·4	5 24·1
Mon.	15	208 0 9·4	215 7 46·9	5 6 24·7	4 54 16·1	7·4	6 16·7
Tues.	16	222 15 29·1	229 22 55·7	4 37 35·1	4 16 37·6	8·4	7 12·4
Wed.	17	236 29 45·9	243 35 38·1	3 51 44·4	3 23 20·5	9·4	8 11·2
Thur.	18	250 40 10·1	257 42 59·3	2 51 54·9	2 17 59·6	10·4	9 11·8
Frid.	19	264 43 42·9	271 41 58·5	1 42 9·5	S.1 5 0·5	11·4	10 12·2
Sat.	20	278 37 24·1	285 29 39·6	S.0 27 9·3	N.0 10 47·5	12·4	11 10·3
Sun.	21	292 18 25·9	299 3 26·5	N.0 48 14·7	1 24 39·1	13·4	12 4·8
Mon.	22	305 44 27·8	312 21 19·4	1 59 30·6	2 32 22·2	14·4	12 55·3
Tues.	23	318 53 54·3	325 22 9·6	3 2 50·1	3 30 35·1	15·4	13 42·1
Wed.	24	331 46 6·8	338 5 51·3	3 55 21·4	4 16 56·2	16·4	14 26·1
Thur.	25	344 21 33·1	350 33 26·0	4 35 11·4	4 50 0·4	17·4	15 8·3
Frid.	26	356 41 48·2	2 47 0·9	5 1 20·3	5 9 9·4	18·4	15 49·8
Sat.	27	8 49 29·1	14 49 40·4	5 13 28·6	5 14 19·9	19·4	16 31·5
Sun.	28	20 48 4·7	26 45 14·0	5 11 46·3	5 5 51·6	20·4	17 14·4
Mon.	29	32 41 41·8	38 38 2·9	4 56 41·0	4 44 20·2	21·4	17 59·2
Tues.	30	44 34 52·9	50 32 47·4	4 28 55·1	4 10 32·8	22·4	18 46·4
Wed.	31	56 32 21·8	62 34 11·1	3 49 21·6	3 25 30·4	23·4	19 36·2
Thur.	32	68 38 48·9	74 46 47·1	N.2 59 9·7	N.2 30 32·0	24·4	20 28·3

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MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 1.				*WEDNESDAY* 3.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	1 23 53·29	N.14 24 24·7	105·18	0	2 59 24·75	N.21 31 32·2	69·06
1	1 25 47·50	14 34 55·8	104·61	1	3 1 30·26	21 38 26·6	68·11
2	1 27 41·90	14 45 23·4	104·02	2	3 3 36·04	21 45 15·3	67·16
3	1 29 36·48	14 55 47·6	103·43	3	3 5 42·08	21 51 58·2	66·19
4	1 31 31·25	15 6 8·2	102·83	4	3 7 48·39	21 58 35·4	65·22
5	1 33 26·22	15 16 25·2	102·23	5	3 9 54·97	22 5 6·7	64·24
6	1 35 21·38	15 26 38·6	101·62	6	3 12 1·81	22 11 32·1	63·25
7	1 37 16·74	15 36 48·3	101·00	7	3 14 8·92	22 17 51·6	62·25
8	1 39 12·30	15 46 54·3	100·37	8	3 16 16·29	22 24 5·2	61·25
9	1 41 8·06	15 56 56·5	99·74	9	3 18 23·92	22 30 12·7	60·23
10	1 43 4·03	16 6 55·0	99·10	10	3 20 31·82	22 36 14·0	59·21
11	1 45 0·21	16 16 49·6	98·46	11	3 22 39·98	22 42 9·3	58·18
12	1 46 56·59	16 26 40·4	97·80	12	3 24 48·40	22 47 58·4	57·15
13	1 48 53·19	16 36 27·2	97·14	13	3 26 57·08	22 53 41·3	56·10
14	1 50 50·01	16 46 10·0	96·47	14	3 29 6·02	22 59 17·9	55·05
15	1 52 47·05	16 55 48·8	95·79	15	3 31 15·23	23 4 48·2	53·99
16	1 54 44·31	17 5 23·6	95·11	16	3 33 24·70	23 10 12·1	52·92
17	1 56 41·79	17 14 54·2	94·42	17	3 35 34·42	23 15 29·6	51·84
18	1 58 39·50	17 24 20·7	93·72	18	3 37 44·39	23 20 40·6	50·75
19	2 0 37·44	17 33 43·0	93·01	19	3 39 54·62	23 25 45·1	49·66
20	2 2 35·61	17 43 1·0	92·29	20	3 42 5·10	23 30 43·1	48·56
21	2 4 34·01	17 52 14·8	91·57	21	3 44 15·83	23 35 34·4	47·45
22	2 6 32·64	18 1 24·2	90·84	22	3 46 26·82	23 40 19·1	46·33
23	2 8 31·52	N.18 10 29·2	90·10	23	3 48 38·05	N.23 44 57·1	45·21
	TUESDAY 2.				*THURSDAY* 4.		
0	2 10 30·63	N.18 19 29·8	89·35	0	3 50 49·52	N.23 49 28·4	44·08
1	2 12 29·98	18 28 25·9	88·60	1	3 53 1·24	23 53 52·9	42·94
2	2 14 29·57	18 37 17·5	87·84	2	3 55 13·20	23 58 10·5	41·79
3	2 16 29·41	18 46 4·6	87·07	3	3 57 25·40	24 2 21·2	40·64
4	2 18 29·50	18 54 47·0	86·29	4	3 59 37·83	24 6 25·0	39·48
5	2 20 29·83	19 3 24·7	85·51	5	4 1 50·50	24 10 21·9	38·31
6	2 22 30·41	19 11 57·8	84·71	6	4 4 3·41	24 14 11·8	37·13
7	2 24 31·24	19 20 26·1	83·91	7	4 6 16·54	24 17 54·5	35·95
8	2 26 32·32	19 28 49·6	83·10	8	4 8 29·90	24 21 30·2	34·76
9	2 28 33·65	19 37 8·2	82·29	9	4 10 43·49	24 24 58·8	33·56
10	2 30 35·24	19 45 21·9	81·46	10	4 12 57·30	24 28 20·2	32·36
11	2 32 37·09	19 53 30·7	80·63	11	4 15 11·33	24 31 34·3	31·15
12	2 34 39·19	20 1 34·4	79·79	12	4 17 25·57	24 34 41·2	29·93
13	2 36 41·55	20 9 33·1	78·94	13	4 19 40·02	24 37 40·8	28·71
14	2 38 44·16	20 17 26·8	78·08	14	4 21 54·69	24 40 33·0	27·48
15	2 40 47·04	20 25 15·3	77·22	15	4 24 9·56	24 43 17·9	26·24
16	2 42 50·18	20 32 58·6	76·34	16	4 26 24·63	24 45 55·3	24·99
17	2 44 53·58	20 40 36·6	75·46	17	4 28 39·91	24 48 25·3	23·74
18	2 46 57·24	20 48 9·4	74·57	18	4 30 55·38	24 50 47·8	22·49
19	2 49 1·16	20 55 36·9	73·67	19	4 33 11·05	24 53 2·7	21·23
20	2 51 5·35	21 2 58·9	72·77	20	4 35 26·90	24 55 10·1	19·96
21	2 53 9·80	21 10 15·5	71·85	21	4 37 42·94	24 57 9·8	18·69
22	2 55 14·52	21 17 26·6	70·93	22	4 39 59·16	24 59 2·0	17·41
23	2 57 19·50	21 24 32·2	70·00	23	4 42 15·56	25 0 46·4	16·12
24	2 59 24·75	N.21 31 32·2		24	4 44 32·14	N.25 2 23·1	

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MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 5.				*SUNDAY* 7.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	4 44 32·14	N.25 2 23·1	14·83	0	6 35 43·75	N.23 42 1·2	50·09
1	4 46 48·89	25 3 52·1	13·53	1	6 38 3·20	23 37 0·6	51·43
2	4 49 5·80	25 5 13·3	12·23	2	6 40 22·59	23 31 52·0	52·77
3	4 51 22·87	25 6 26·7	10·93	3	6 42 41·91	23 26 35·4	54·11
4	4 53 40·10	25 7 32·3	9·62	4	6 45 1·17	23 21 10·8	55·44
5	4 55 57·49	25 8 30·0	8·31	5	6 47 20·36	23 15 38·2	56·76
6	4 58 15·03	25 9 19·8	6·99	6	6 49 39·47	23 9 57·6	58·08
7	5 0 32·71	25 10 1·7	5·66	7	6 51 58·50	23 4 9·1	59·39
8	5 2 50·53	25 10 35·7	4·34	8	6 54 17·45	22 58 12·8	60·70
9	5 5 8·48	25 11 1·7	3·01	9	6 56 36·31	22 52 8·6	62·01
10	5 7 26·57	25 11 19·8	1·67	10	6 58 55·07	22 45 56·5	63·31
11	5 9 44·78	25 11 29·8	0·33	11	7 1 13·74	22 39 36·6	64·61
12	5 12 3·12	25 11 31·8	1·00	12	7 3 32·31	22 33 9·0	65·90
13	5 14 21·57	25 11 25·8	2·34	13	7 5 50·78	22 26 33·6	67·18
14	5 16 40·14	25 11 11·7	3·69	14	7 8 9·14	22 19 50·5	68·46
15	5 18 58·81	25 10 49·6	5·04	15	7 10 27·40	22 12 59·8	69·73
16	5 21 17·59	25 10 19·3	6·40	16	7 12 45·55	22 6 1·4	71·00
17	5 23 36·47	25 9 40·9	7·75	17	7 15 3·58	21 58 55·4	72·26
18	5 25 55·44	25 8 54·4	9·11	18	7 17 21·49	21 51 41·8	73·51
19	5 28 14·50	25 7 59·7	10·47	19	7 19 39·28	21 44 20·7	74·76
20	5 30 33·64	25 6 56·9	11·83	20	7 21 56·94	21 36 52·1	76·00
21	5 32 52·86	25 5 45·9	13·20	21	7 24 14·48	21 29 16·1	77·23
22	5 35 12·16	25 4 26·7	14·57	22	7 26 31·89	21 21 32·7	78·46
23	5 37 31·52	N.25 2 59·3	15·94	23	7 28 49·17	N.21 13 42·0	79·68
	SATURDAY 6.				*MONDAY* 8.		
0	5 39 50·95	N.25 1 23·6	17·31	0	7 31 6·31	N.21 5 43·9	80·89
1	5 42 10·44	24 59 39·8	18·68	1	7 33 23·31	20 57 38·6	82·09
2	5 44 29·98	24 57 47·7	20·05	2	7 35 40·18	20 49 26·0	83·29
3	5 46 49·58	24 55 47·4	21·42	3	7 37 56·90	20 41 6·3	84·48
4	5 49 9·22	24 53 38·8	22·80	4	7 40 13·48	20 32 39·4	85·66
5	5 51 28·90	24 51 22·0	24·17	5	7 42 29·91	20 24 5·4	86·83
6	5 53 48·61	24 48 57·0	25·54	6	7 44 46·20	20 15 24·4	88·00
7	5 56 8·35	24 46 23·8	26·92	7	7 47 2·34	20 6 36·4	89·15
8	5 58 28·12	24 43 42·3	28·29	8	7 49 18·33	19 57 41·5	90·30
9	6 0 47·91	24 40 52·5	29·66	9	7 51 34·17	19 48 39·7	91·44
10	6 3 7·71	24 37 54·5	31·04	10	7 53 49·85	19 39 31·1	92·57
11	6 5 27·52	24 34 48·3	32·41	11	7 56 5·38	19 30 15·7	93·69
12	6 7 47·33	24 31 33·8	33·78	12	7 58 20·75	19 20 53·5	94·80
13	6 10 7·14	24 28 11·1	35·15	13	8 0 35·96	19 11 24·7	95·90
14	6 12 26·95	24 24 40·2	36·52	14	8 2 51·01	19 1 49·3	96·99
15	6 14 46·75	24 21 1·1	37·89	15	8 5 5·90	18 52 7·4	98·08
16	6 17 6·54	24 17 13·7	39·25	16	8 7 20·63	18 42 18·9	99·15
17	6 19 26·31	24 13 18·2	40·62	17	8 9 35·20	18 32 24·0	100·21
18	6 21 46·05	24 9 14·5	41·98	18	8 11 49·60	18 22 22·7	101·27
19	6 24 5·76	24 5 2·6	43·34	19	8 14 3·84	18 12 15·1	102·31
20	6 26 25·44	24 0 42·6	44·69	20	8 16 17·92	18 2 1·2	103·35
21	6 28 45·08	23 56 14·4	46·05	21	8 18 31·83	17 51 41·1	104·38
22	6 31 4·68	23 51 38·1	47·40	22	8 20 45·58	17 41 14·9	105·39
23	6 33 24·24	23 46 53·7	48·75	23	8 22 59·17	17 30 42·6	106·39
24	6 35 43·75	N.23 42 1·2		24	8 25 12·59	N.17 20 4·2	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 9.				*THURSDAY* 11.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	8 25 12·59	N. 17 20 4·2	107·39	0	10 9 2·11	N. 7 13 0·0	141·75
1	8 27 25·84	17 9 19·9	108·37	1	10 11 9·06	6 58 49·5	142·17
2	8 29 38·93	16 58 29·7	109·34	2	10 13 15·94	6 44 36·5	142·58
3	8 31 51·86	16 47 33·6	110·31	3	10 15 22·76	6 30 21·0	142·97
4	8 34 4·62	16 36 31·7	111·26	4	10 17 29·51	6 16 3·1	143·36
5	8 36 17·21	16 25 24·1	112·20	5	10 19 36·21	6 1 43·0	143·72
6	8 38 29·64	16 14 10·9	113·13	6	10 21 42·85	5 47 20·6	144·08
7	8 40 41·91	16 2 52·1	114·05	7	10 23 49·43	5 32 56·1	144·42
8	8 42 54·02	15 51 27·8	114·96	8	10 25 55·97	5 18 29·6	144·75
9	8 45 5·96	15 39 58·0	115·86	9	10 28 2·47	5 4 1·1	145·07
10	8 47 17·74	15 28 22·8	116·75	10	10 30 8·93	4 49 30·7	145·37
11	8 49 29·36	15 16 42·3	117·63	11	10 32 15·35	4 34 58·5	145·66
12	8 51 40·83	15 4 56·6	118·49	12	10 34 21·74	4 20 24·5	145·95
13	8 53 52·14	14 53 5·7	119·34	13	10 36 28·10	4 5 48·8	146·22
14	8 56 3·29	14 41 9·6	120·18	14	10 38 34·44	3 51 11·5	146·47
15	8 58 14·28	14 29 8·5	121·01	15	10 40 40·75	3 36 32·7	146·71
16	9 0 25·12	14 17 2·4	121·83	16	10 42 47·05	3 21 52·4	146·94
17	9 2 35·80	14 4 51·4	122·64	17	10 44 53·34	3 7 10·7	147·16
18	9 4 46·33	13 52 35·6	123·43	18	10 46 59·62	2 52 27·8	147·36
19	9 6 56·71	13 40 15·0	124·22	19	10 49 5·89	2 37 43·7	147·54
20	9 9 6·95	13 27 49·7	124·99	20	10 51 12·17	2 22 58·4	147·72
21	9 11 17·04	13 15 19·7	125·75	21	10 53 18·45	2 8 12·1	147·88
22	9 13 26·99	13 2 45·2	126·50	22	10 55 24·73	1 53 24·8	148·04
23	9 15 36·79	N. 12 50 6·2	127·23	23	10 57 31·03	N. 1 38 36·6	148·18
	WEDNESDAY 10.				*FRIDAY* 12.		
0	9 17 46·45	N. 12 37 22·8	127·96	0	10 59 37·34	N. 1 23 47·5	148·30
1	9 19 55·97	12 24 35·0	128·68	1	11 1 43·67	1 8 57·7	148·41
2	9 22 5·35	12 11 42·9	129·38	2	11 3 50·03	0 54 7·2	148·51
3	9 24 14·60	11 58 46·6	130·07	3	11 5 56·41	0 39 16·2	148·60
4	9 26 23·72	11 45 46·2	130·75	4	11 8 2·83	0 24 24·6	148·67
5	9 28 32·70	11 32 41·7	131·42	5	11 10 9·29	N. 0 9 32·5	148·73
6	9 30 41·56	11 19 33·2	132·07	6	11 12 15·79	S. 0 5 19·9	148·78
7	9 32 50·29	11 6 20·8	132·71	7	11 14 22·33	0 20 12·5	148·81
8	9 34 58·89	10 53 4·5	133·34	8	11 16 28·92	0 35 5·4	148·83
9	9 37 7·38	10 39 44·4	133·96	9	11 18 35·56	0 49 58·4	148·83
10	9 39 15·75	10 26 20·7	134·56	10	11 20 42·26	1 4 51·4	148·83
11	9 41 24·00	10 12 53·3	135·16	11	11 22 49·03	1 19 44·4	148·81
12	9 43 32·14	9 59 22·4	135·74	12	11 24 55·86	1 34 37·3	148·78
13	9 45 40·17	9 45 48·0	136·31	13	11 27 2·76	1 49 30·0	148·74
14	9 47 48·10	9 32 10·1	136·87	14	11 29 9·74	2 4 22·4	148·68
15	9 49 55·92	9 18 28·9	137·41	15	11 31 16·80	2 19 14·5	148·61
16	9 52 3·63	9 4 44·4	137·94	16	11 33 23·95	2 34 6·1	148·52
17	9 54 11·25	8 50 56·7	138·46	17	11 35 31·18	2 48 57·2	148·42
18	9 56 18·78	8 37 6·0	138·97	18	11 37 38·50	3 3 47·7	148·30
19	9 58 26·21	8 23 12·2	139·46	19	11 39 45·92	3 18 37·5	148·18
20	10 0 33·55	8 9 15·4	139·95	20	11 41 53·45	3 33 26·6	148·03
21	10 2 40·81	7 55 15·7	140·41	21	11 44 1·08	3 48 14·9	147·88
22	10 4 47·99	7 41 13·2	140·87	22	11 46 8·82	4 3 2·2	147·71
23	10 6 55·09	7 27 7·9	141·31	23	11 48 16·67	4 17 48·4	147·53
24	10 9 2·11	N. 7 13 0·0		24	11 50 24·65	S. 4 32 33·6	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 13.		
	h m s	° ′ ″	″
0	11 50 24·65	S. 4 32 33·6	147·34
1	11 52 32·75	4 47 17·6	147·13
2	11 54 40·97	5 2 0·4	146·91
3	11 56 49·33	5 16 41·9	146·68
4	11 58 57·82	5 31 22·0	146·43
5	12 1 6·46	5 46 0·6	146·17
6	12 3 15·24	6 0 37·6	145·89
7	12 5 24·16	6 15 12·9	145·60
8	12 7 33·24	6 29 46·5	145·29
9	12 9 42·48	6 44 18·2	144·97
10	12 11 51·87	6 58 48·0	144·64
11	12 14 1·44	7 13 15·9	144·30
12	12 16 11·17	7 27 41·7	143·93
13	12 18 21·08	7 42 5·3	143·56
14	12 20 31·16	7 56 26·7	143·18
15	12 22 41·43	8 10 45·7	142·77
16	12 24 51·88	8 25 2·3	142·36
17	12 27 2·52	8 39 16·5	141·93
18	12 29 13·36	8 53 28·1	141·48
19	12 31 24·39	9 7 37·0	141·02
20	12 33 35·63	9 21 43·1	140·54
21	12 35 47·07	9 35 46·4	140·06
22	12 37 58·72	9 49 46·7	139·55
23	12 40 10·58	S. 10 3 44·0	139·04
	SUNDAY 14.		
0	12 42 22·66	S. 10 17 38·2	138·51
1	12 44 34·96	10 31 29·3	137·97
2	12 46 47·48	10 45 17·1	137·41
3	12 49 0·24	10 59 1·5	136·84
4	12 51 13·22	11 12 42·5	136·25
5	12 53 26·44	11 26 20·0	135·64
6	12 55 39·90	11 39 53·9	135·02
7	12 57 53·60	11 53 24·1	134·39
8	13 0 7·54	12 6 50·4	133·74
9	13 2 21·73	12 20 12·8	133·08
10	13 4 36·17	12 33 31·3	132·40
11	13 6 50·87	12 46 45·7	131·71
12	13 9 5·83	12 59 56·0	131·00
13	13 11 21·05	13 13 2·0	130·28
14	13 13 36·53	13 26 3·7	129·55
15	13 15 52·27	13 39 1·1	128·80
16	13 18 8·28	13 51 53·9	128·04
17	13 20 24·57	14 4 42·1	127·26
18	13 22 41·13	14 17 25·6	126·46
19	13 24 57·96	14 30 4·4	125·65
20	13 27 15·07	14 42 38·3	124·83
21	13 29 32·47	14 55 7·3	123·99
22	13 31 50·14	15 7 31·2	123·13
23	13 34 8·10	15 19 50·0	122·26
24	13 36 26·35	S. 15 32 3·6	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 15.		
	h m s	° ′ ″	″
0	13 36 26·35	S. 15 32 3·6	121·38
1	13 38 44·89	15 44 11·9	120·48
2	13 41 3·72	15 56 14·8	119·57
3	13 43 22·84	16 8 12·2	118·64
4	13 45 42·26	16 20 4·1	117·70
5	13 48 1·98	16 31 50·3	116·74
6	13 50 21·99	16 43 30·8	115·77
7	13 52 42·30	16 55 5·4	114·78
8	13 55 2·91	17 6 34·1	113·78
9	13 57 23·82	17 17 56·7	112·76
10	13 59 45·03	17 29 13·3	111·73
11	14 2 6·54	17 40 23·7	110·68
12	14 4 28·36	17 51 27·8	109·62
13	14 6 50·48	18 2 25·6	108·55
14	14 9 12·91	18 13 16·9	107·46
15	14 11 35·64	18 24 1·6	106·35
16	14 13 58·68	18 34 39·7	105·23
17	14 16 22·02	18 45 11·1	104·10
18	14 18 45·67	18 55 35·7	102·95
19	14 21 9·62	19 5 53·4	101·78
20	14 23 33·87	19 16 4·1	100·61
21	14 25 58·42	19 26 7·7	99·42
22	14 28 23·28	19 36 4·2	98·21
23	14 30 48·44	S. 19 45 53·5	96·99
	TUESDAY 16.		
0	14 33 13·90	S. 19 55 35·4	95·76
1	14 35 39·66	20 5 10·0	94·52
2	14 38 5·72	20 14 37·1	93·26
3	14 40 32·07	20 23 56·6	91·98
4	14 42 58·72	20 33 8·5	90·69
5	14 45 25·67	20 42 12·7	89·39
6	14 47 52·90	20 51 9·0	88·08
7	14 50 20·42	20 59 57·5	86·75
8	14 52 48·23	21 8 38·0	85·41
9	14 55 16·33	21 17 10·5	84·05
10	14 57 44·70	21 25 34·8	82·69
11	15 0 13·36	21 33 50·9	81·31
12	15 2 42·29	21 41 58·8	79·92
13	15 5 11·50	21 49 58·4	78·52
14	15 7 40·97	21 57 49·5	77·11
15	15 10 10·71	22 5 32·1	75·68
16	15 12 40·72	22 13 6·2	74·24
17	15 15 10·98	22 20 31·7	72·79
18	15 17 41·50	22 27 48·4	71·33
19	15 20 12·27	22 34 56·4	69·86
20	15 22 43·28	22 41 55·6	68·37
21	15 25 14·54	22 48 45·8	66·88
22	15 27 46·04	22 55 27·1	65·37
23	15 30 17·76	23 1 59·3	63·86
24	15 32 49·72	S. 23 8 22·5	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 17.				*FRIDAY* 19.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	15 32 49·72	S. 23 8 22·5	62·34	0	17 36 43·65	S. 25 3 14·7	17·19
1	15 35 21·90	23 14 36·6	60·80	1	17 39 18·31	25 1 31·6	18·85
2	15 37 54·30	23 20 41·4	59·26	2	17 41 52·82	24 59 38·5	20·50
3	15 40 26·91	23 26 36·9	57·70	3	17 44 27·18	24 57 35·5	22·15
4	15 42 59·73	23 32 23·1	56·14	4	17 47 1·38	24 55 22·6	23·78
5	15 45 32·75	23 38 0·0	54·57	5	17 49 35·41	24 52 59·9	25·41
6	15 48 5·96	23 43 27·4	52·99	6	17 52 9·26	24 50 27·4	27·04
7	15 50 39·37	23 48 45·3	51·40	7	17 54 42·94	24 47 45·2	28·66
8	15 53 12·96	23 53 53·7	49·80	8	17 57 16·42	24 44 53·2	30·26
9	15 55 46·72	23 58 52·5	48·20	9	17 59 49·70	24 41 51·6	31·87
10	15 58 20·65	24 3 41·7	46·58	10	18 2 22·78	24 38 40·4	33·46
11	16 0 54·75	24 8 21·2	44·96	11	18 4 55·65	24 35 19·6	35·05
12	16 3 29·01	24 12 50·9	43·33	12	18 7 28·30	24 31 49·3	36·63
13	16 6 3·42	24 17 10·9	41·70	13	18 10 0·72	24 28 9·5	38·20
14	16 8 37·97	24 21 21·1	40·06	14	18 12 32·91	24 24 20·3	39·76
15	16 11 12·66	24 25 21·4	38·41	15	18 15 4·86	24 20 21·8	41·31
16	16 13 47·48	24 29 11·9	36·76	16	18 17 36·56	24 16 13·9	42·85
17	16 16 22·43	24 32 52·5	35·10	17	18 20 8·00	24 11 56·8	44·38
18	16 18 57·49	24 36 23·1	33·44	18	18 22 39·19	24 7 30·5	45·90
19	16 21 32·65	24 39 43·8	31·77	19	18 25 10·12	24 2 55·1	47·41
20	16 24 7·92	24 42 54·4	30·10	20	18 27 40·78	23 58 10·7	48·91
21	16 26 43·28	24 45 55·0	28·43	21	18 30 11·15	23 53 17·2	50·40
22	16 29 18·73	24 48 45·6	26·75	22	18 32 41·25	23 48 14·8	51·87
23	16 31 54·25	S. 24 51 26·1	25·06	23	18 35 11·06	S. 23 43 3·6	53·34
	THURSDAY 18.				*SATURDAY* 20.		
0	16 34 29·84	S. 24 53 56·4	23·37	0	18 37 40·57	S. 23 37 43·6	54·80
1	16 37 5·50	24 56 16·6	21·68	1	18 40 9·79	23 32 14·8	56·24
2	16 39 41·21	24 58 26·7	19·99	2	18 42 38·70	23 26 37·4	57·67
3	16 42 16·96	25 0 26·7	18·29	3	18 45 7·30	23 20 51·4	59·09
4	16 44 52·75	25 2 16·4	16·60	4	18 47 35·59	23 14 56·8	60·50
5	16 47 28·57	25 3 56·0	14·90	5	18 50 3·56	23 8 53·8	61·89
6	16 50 4·41	25 5 25·4	13·20	6	18 52 31·21	23 2 42·5	63·27
7	16 52 40·27	25 6 44·7	11·50	7	18 54 58·54	22 56 22·9	64·64
8	16 55 16·13	25 7 53·7	9·80	8	18 57 25·53	22 49 55·0	65·99
9	16 57 51·98	25 8 52·5	8·10	9	18 59 52·18	22 43 19·1	67·33
10	17 0 27·82	25 9 41·1	6·40	10	19 2 18·50	22 36 35·1	68·66
11	17 3 3·64	25 10 19·5	4·70	11	19 4 44·47	22 29 43·1	69·98
12	17 5 39·44	25 10 47·7	3·00	12	19 7 10·10	22 22 43·3	71·28
13	17 8 15·20	25 11 5·7	1·30	13	19 9 35·38	22 15 35·6	72·57
14	17 10 50·91	25 11 13·5	0·39	14	19 12 0·30	22 8 20·2	73·85
15	17 13 26·57	25 11 11·2	2·08	15	19 14 24·87	22 0 57·1	75·11
16	17 16 2·16	25 10 58·7	3·78	16	19 16 49·07	21 53 26·4	76·36
17	17 18 37·68	25 10 36·0	5·46	17	19 19 12·92	21 45 48·3	77·59
18	17 21 13·12	25 10 3·2	7·15	18	19 21 36·40	21 38 2·8	78·81
19	17 23 48·48	25 9 20·3	8·83	19	19 23 59·51	21 30 9·9	80·01
20	17 26 23·74	25 8 27·3	10·51	20	19 26 22·26	21 22 9·8	81·20
21	17 28 58·89	25 7 24·2	12·19	21	19 28 44·63	21 14 2·6	82·38
22	17 31 33·93	25 6 11·1	13·86	22	19 31 6·63	21 5 48·3	83·54
23	17 34 8·85	25 4 47·9	15·53	23	19 33 28·26	20 57 27·1	84·69
24	17 36 43·65	S. 25 3 14·7		24	19 35 49·51	S. 20 48 59·0	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SUNDAY 21.				*TUESDAY 23.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	19 35 49·51	S. 20 48 59·0	85·81	0	21 21 26·59	S. 12 16 20·1	123·08
1	19 38 10·38	20 40 24·1	86·93	1	21 23 29·95	12 4 1·6	123·53
2	19 40 30·87	20 31 42·5	88·04	2	21 25 33·00	11 51 40·4	123·96
3	19 42 50·98	20 22 54·3	89·13	3	21 27 35·75	11 39 16·7	124·37
4	19 45 10·71	20 13 59·5	90·20	4	21 29 38·19	11 26 50·5	124·77
5	19 47 30·05	20 4 58·3	91·26	5	21 31 40·32	11 14 21·9	125·16
6	19 49 49·01	19 55 50·7	92·30	6	21 33 42·16	11 1 50·9	125·54
7	19 52 7·59	19 46 36·9	93·33	7	21 35 43·70	10 49 17·7	125·90
8	19 54 25·79	19 37 16·9	94·35	8	21 37 44·95	10 36 42·3	126·25
9	19 56 43·60	19 27 50·8	95·35	9	21 39 45·91	10 24 4·8	126·60
10	19 59 1·02	19 18 18·8	96·33	10	21 41 46·58	10 11 25·2	126·93
11	20 1 18·06	19 8 40·8	97·30	11	21 43 46·98	9 58 43·6	127·25
12	20 3 34·71	18 58 56·9	98·26	12	21 45 47·09	9 46 0·1	127·56
13	20 5 50·98	18 49 7·4	99·20	13	21 47 46·93	9 33 14·7	127·86
14	20 8 6·86	18 39 12·2	100·12	14	21 49 46·51	9 20 27·6	128·14
15	20 10 22·35	18 29 11·4	101·04	15	21 51 45·81	9 7 38·8	128·41
16	20 12 37·46	18 19 5·2	101·93	16	21 53 44·85	8 54 48·3	128·68
17	20 14 52·19	18 8 53·6	102·81	17	21 55 43·64	8 41 56·2	128·93
18	20 17 6·54	17 58 36·7	103·68	18	21 57 42·17	8 29 2·6	129·17
19	20 19 20·51	17 48 14·6	104·53	19	21 59 40·44	8 16 7·6	129·40
20	20 21 34·09	17 37 47·4	105·37	20	22 1 38·47	8 3 11·2	129·62
21	20 23 47·29	17 27 15·2	106·19	21	22 3 36·26	7 50 13·4	129·83
22	20 26 0·12	17 16 38·1	107·00	22	22 5 33·81	7 37 14·5	130·03
23	20 28 12·56	S. 17 5 56·1	107·79	23	22 7 31·12	S. 7 24 14·3	130·22
	MONDAY 22.				*WEDNESDAY 24.*		
0	20 30 24·63	S. 16 55 9·4	108·57	0	22 9 28·20	S. 7 11 13·0	130·39
1	20 32 36·33	16 44 18·0	109·33	1	22 11 25·05	6 58 10·7	130·56
2	20 34 47·65	16 33 22·0	110·09	2	22 13 21·68	6 45 7·3	130·71
3	20 36 58·60	16 22 21·5	110·82	3	22 15 18·09	6 32 3·1	130·86
4	20 39 9·18	16 11 16·5	111·54	4	22 17 14·28	6 18 57·9	131·00
5	20 41 19·39	16 0 7·3	112·25	5	22 19 10·25	6 5 51·9	131·13
6	20 43 29·24	15 48 53·8	112·94	6	22 21 6·02	5 52 45·2	131·24
7	20 45 38·72	15 37 36·1	113·62	7	22 23 1·59	5 39 37·7	131·35
8	20 47 47·84	15 26 14·4	114·28	8	22 24 56·95	5 26 29·6	131·45
9	20 49 56·61	15 14 48·7	114·93	9	22 26 52·11	5 13 20·9	131·54
10	20 52 5·01	15 3 19·1	115·57	10	22 28 47·09	5 0 11·6	131·62
11	20 54 13·06	14 51 45·7	116·20	11	22 30 41·87	4 47 1·9	131·69
12	20 56 20·76	14 40 8·5	116·81	12	22 32 36·47	4 33 51·8	131·75
13	20 58 28·11	14 28 27·7	117·40	13	22 34 30·89	4 20 41·3	131·81
14	21 0 35·11	14 16 43·2	117·99	14	22 36 25·13	4 7 30·4	131·85
15	21 2 41·76	14 4 55·3	118·56	15	22 38 19·20	3 54 19·3	131·88
16	21 4 48·07	13 53 4·0	119·11	16	22 40 13·10	3 41 8·0	131·91
17	21 6 54·04	13 41 9·3	119·65	17	22 42 6·84	3 27 56·6	131·92
18	21 8 59·68	13 29 11·4	120·18	18	22 44 0·42	3 14 45·0	131·93
19	21 11 4·98	13 17 10·3	120·70	19	22 45 53·84	3 1 33·5	131·93
20	21 13 9·95	13 5 6·1	121·20	20	22 47 47·10	2 48 21·9	131·92
21	21 15 14·59	12 52 58·9	121·69	21	22 49 40·22	2 35 10·4	131·90
22	21 17 18·91	12 40 48·8	122·16	22	22 51 33·20	2 21 59·0	131·87
23	21 19 22·91	12 28 35·8	122·63	23	22 53 26·03	2 8 47·8	131·83
24	21 21 26·59	S. 12 16 20·1		24	22 55 18·73	S. 1 55 36·8	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 25.				*SATURDAY 27.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	22 55 18·73	S. 1 55 36·8	131·78	0	0 24 6·51	N. 8 17 58·8	120·95
1	22 57 11·30	1 42 26·1	131·73	1	0 25 57·39	8 30 4·5	120·56
2	22 59 3·74	1 29 15·7	131·67	2	0 27 48·33	8 42 7·9	120·17
3	23 0 56·06	1 16 5·7	131·60	3	0 29 39·33	8 54 8·9	119·76
4	23 2 48·25	1 2 56·1	131·53	4	0 31 30·40	9 6 7·5	119·35
5	23 4 40·33	0 49 46·9	131·44	5	0 33 21·53	9 18 3·6	118·93
6	23 6 32·30	0 36 38·3	131·35	6	0 35 12·74	9 29 57·2	118·51
7	23 8 24·16	0 23 30·2	131·25	7	0 37 4·02	9 41 48·3	118·08
8	23 10 15·92	S. 0 10 22·7	131·14	8	0 38 55·38	9 53 36·8	117·65
9	23 12 7·58	N. 0 2 44·1	131·02	9	0 40 46·82	10 5 22·7	117·20
10	23 13 59·14	0 15 50·3	130·90	10	0 42 38·36	10 17 5·9	116·75
11	23 15 50·61	0 28 55·7	130·77	11	0 44 29·98	10 28 46·4	116·30
12	23 17 41·99	0 42 0·3	130·63	12	0 46 21·69	10 40 24·2	115·84
13	23 19 33·29	0 55 4·1	130·49	13	0 48 13·50	10 51 59·2	115·37
14	23 21 24·51	1 8 7·0	130·33	14	0 50 5·41	11 3 31·4	114·90
15	23 23 15·65	1 21 9·0	130·17	15	0 51 57·42	11 15 0·8	114·42
16	23 25 6·72	1 34 10·1	130·00	16	0 53 49·54	11 26 27·3	113·93
17	23 26 57·72	1 47 10·1	129·83	17	0 55 41·77	11 37 50·9	113·43
18	23 28 48·66	2 0 9·1	129·65	18	0 57 34·11	11 49 11·5	112·93
19	23 30 39·54	2 13 6·9	129·46	19	0 59 26·57	12 0 29·1	112·43
20	23 32 30·37	2 26 3·7	129·26	20	1 1 19·15	12 11 43·7	111·92
21	23 34 21·14	2 38 59·2	129·05	21	1 3 11·85	12 22 55·2	111·40
22	23 36 11·86	2 51 53·5	128·84	22	1 5 4·68	12 34 3·6	110·87
23	23 38 2·54	N. 3 4 46·6	128·62	23	1 6 57·63	N.12 45 8·8	110·34
	FRIDAY 26.				*SUNDAY 28.*		
0	23 39 53·18	N. 3 17 38·3	128·39	0	1 8 50·72	N.12 56 10·8	109·80
1	23 41 43·79	3 30 28·7	128·16	1	1 10 43·95	13 7 9·6	109·25
2	23 43 34·36	3 43 17·6	127·92	2	1 12 37·31	13 18 5·1	108·70
3	23 45 24·90	3 56 5·1	127·67	3	1 14 30·81	13 28 57·3	108·14
4	23 47 15·42	4 8 51·1	127·42	4	1 16 24·46	13 39 46·2	107·58
5	23 49 5·92	4 21 35·7	127·16	5	1 18 18·26	13 50 31·7	107·01
6	23 50 56·40	4 34 18·6	126·89	6	1 20 12·21	14 1 13·8	106·43
7	23 52 46·87	4 46 59·9	126·62	7	1 22 6·31	14 11 52·3	105·85
8	23 54 37·33	4 59 39·6	126·33	8	1 24 0·57	14 22 27·4	105·26
9	23 56 27·78	5 12 17·6	126·05	9	1 25 54·99	14 32 59·0	104·66
10	23 58 18·23	5 24 53·9	125·75	10	1 27 49·57	14 43 27·0	104·06
11	0 0 8·68	5 37 28·4	125·45	11	1 29 44·31	14 53 51·3	103·45
12	0 1 59·14	5 50 1·1	125·14	12	1 31 39·23	15 4 12·0	102·83
13	0 3 49·61	6 2 32·0	124·83	13	1 33 34·32	15 14 29·0	102·20
14	0 5 40·09	6 15 0·9	124·51	14	1 35 29·58	15 24 42·2	101·57
15	0 7 30·60	6 27 28·0	124·18	15	1 37 25·01	15 34 51·6	100·93
16	0 9 21·12	6 39 53·1	123·85	16	1 39 20·63	15 44 57·2	100·29
17	0 11 11·67	6 52 16·2	123·51	17	1 41 16·43	15 54 59·0	99·64
18	0 13 2·25	7 4 37·3	123·17	18	1 43 12·41	16 4 56·8	98·98
19	0 14 52·86	7 16 56·3	122·82	19	1 45 8·58	16 14 50·7	98·32
20	0 16 43·50	7 29 13·2	122·46	20	1 47 4·93	16 24 40·7	97·65
21	0 18 34·18	7 41 27·9	122·09	21	1 49 1·48	16 34 26·6	96·97
22	0 20 24·91	7 53 40·5	121·72	22	1 50 58·23	16 44 8·4	96·29
23	0 22 15·69	8 5 50·8	121·34	23	1 52 55·17	16 53 46·1	95·59
24	0 24 6·51	N. 8 17 58·8		24	1 54 52·31	N.17 3 19·7	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 29.		
	h m s	° ′ ″	″
0	1 54 52·31	N.17 3 19·7	94·89
1	1 56 49·65	17 12 49·1	94·19
2	1 58 47·20	17 22 14·2	93·48
3	2 0 44·95	17 31 35·1	92·76
4	2 2 42·91	17 40 51·6	92·03
5	2 4 41·08	17 50 3·8	91·30
6	2 6 39·46	17 59 11·6	90·56
7	2 8 38·06	18 8 14·9	89·81
8	2 10 36·87	18 17 13·8	89·05
9	2 12 35·90	18 26 8·1	88·29
10	2 14 35·15	18 34 57·9	87·52
11	2 16 34·63	18 43 43·0	86·75
12	2 18 34·33	18 52 23·5	85·96
13	2 20 34·25	19 0 59·3	85·17
14	2 22 34·40	19 9 30·3	84·37
15	2 24 34·79	19 17 56·5	83·56
16	2 26 35·40	19 26 17·8	82·75
17	2 28 36·24	19 34 34·3	81·93
18	2 30 37·32	19 42 45·9	81·10
19	2 32 38·63	19 50 52·5	80·26
20	2 34 40·19	19 58 54·1	79·42
21	2 36 41·98	20 6 50·6	78·57
22	2 38 44·00	20 14 42·1	77·71
23	2 40 46·27	N.20 22 28·4	76·85
	TUESDAY 30.		
0	2 42 48·78	N.20 30 9·4	75·97
1	2 44 51·53	20 37 45·3	75·09
2	2 46 54·53	20 45 15·8	74·21
3	2 48 57·77	20 52 41·1	73·31
4	2 51 1·25	21 0 1·0	72·41
5	2 53 4·98	21 7 15·4	71·50
6	2 55 8·96	21 14 24·4	70·58
7	2 57 13·19	21 21 27·9	69·66
8	2 59 17·66	21 28 25·9	68·72
9	3 1 22·38	21 35 18·2	67·78
10	3 3 27·36	21 42 4·9	66·84
11	3 5 32·58	21 48 46·0	65·88
12	3 7 38·05	21 55 21·2	64·92
13	3 9 43·77	22 1 50·7	63·95
14	3 11 49·74	22 8 14·4	62·97
15	3 13 55·96	22 14 32·2	61·98
16	3 16 2·42	22 20 44·1	60·99
17	3 18 9·14	22 26 50·1	59·99
18	3 20 16·11	22 32 50·0	58·98
19	3 22 23·33	22 38 43·9	57·97
20	3 24 30·80	22 44 31·7	56·94
21	3 26 38·51	22 50 13·4	55·91
22	3 28 46·47	22 55 48·9	54·87
23	3 30 54·68	23 1 18·1	53·83
24	3 33 3·14	N.23 6 41·1	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 31.		
	h m s	° ′ ″	″
0	3 33 3·14	N.23 6 41·1	52·78
1	3 35 11·84	23 11 57·8	51·72
2	3 37 20·79	23 17 8·1	50·65
3	3 39 29·99	23 22 12·0	49·57
4	3 41 39·43	23 27 9·4	48·49
5	3 43 49·11	23 32 0·4	47·40
6	3 45 59·03	23 36 44·8	46·30
7	3 48 9·19	23 41 22·6	45·20
8	3 50 19·59	23 45 53·8	44·09
9	3 52 30·23	23 50 18·4	42·97
10	3 54 41·11	23 54 36·2	41·84
11	3 56 52·22	23 58 47·3	40·71
12	3 59 3·56	24 2 51·5	39·57
13	4 1 15·13	24 6 48·9	38·43
14	4 3 26·94	24 10 39·5	37·27
15	4 5 38·97	24 14 23·1	36·11
16	4 7 51·23	24 17 59·8	34·94
17	4 10 3·71	24 21 29·5	33·77
18	4 12 16·41	24 24 52·1	32·59
19	4 14 29·33	24 28 7·7	31·40
20	4 16 42·47	24 31 16·1	30·21
21	4 18 55·82	24 34 17·4	29·01
22	4 21 9·39	24 37 11·4	27·80
23	4 23 23·17	N.24 39 58·3	26·59
	THURSDAY, AUG. 1.		
0	4 25 37·15	N.24 42 37·8	

PHASES OF THE MOON.

		d	h	m
●	New Moon	7	14	12·1
☽	*First Quarter*	14	14	47·3
○	Full Moon	21	12	5·5
☾	*Last Quarter*	29	7	51·4

		d	h
☾	Apogee	1	3
☾	Perigee	15	20
☾	Apogee	28	21

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.	P.L. of diff.	IIIh.	P.L. of diff.	VIh.	P.L. of diff.	IXh.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	α Aquilæ W.	83 2 58	3608	84 21 24	3605	85 39 53	3601	86 58 26	3599
	Fomalhaut W.	58 4 58	3681	59 22 5	3662	60 39 32	3645	61 57 18	3627
	α Pegasi W.	35 18 32	3507	36 38 48	3477	37 59 38	3451	39 20 57	3426
	Aldebaran E.	44 20 1	3174	42 53 21	3181	41 26 49	3186	40 0 23	3191
	Sun E.	74 51 24	3435	73 29 47	3435	72 8 10	3433	70 46 31	3431
2	α Aquilæ W.	93 31 54	3586	94 50 43	3585	96 9 34	3583	97 28 27	3582
	Fomalhaut W.	68 30 33	3552	69 50 0	3538	71 9 42	3525	72 29 38	3512
	α Pegasi W.	46 13 56	3326	47 37 38	3309	49 1 39	3294	50 25 58	3278
	Aldebaran E.	32 50 8	3231	31 24 36	3242	29 59 16	3256	28 34 13	3272
	Sun E.	63 57 37	3416	62 35 39	3411	61 13 35	3407	59 51 26	3401
3	α Aquilæ W.	104 3 4	3581	105 21 59	3582	106 40 53	3584	107 59 45	3586
	Fomalhaut W.	79 12 46	3454	80 34 2	3442	81 55 31	3432	83 17 12	3422
	α Pegasi W.	57 31 55	3208	58 57 55	3194	60 24 12	3181	61 50 44	3168
	Sun E.	52 58 59	3368	51 36 6	3361	50 13 5	3352	48 49 54	3344
4	Fomalhaut W.	90 8 28	3372	91 31 16	3364	92 54 14	3355	94 17 22	3347
	α Pegasi W.	69 7 14	3105	70 35 17	3092	72 3 36	3080	73 32 10	3068
	α Arietis W.	25 33 54	3033	27 3 26	3014	28 33 21	2997	30 3 37	2981
	Sun E.	41 51 25	3297	40 27 10	3287	39 2 43	3276	37 38 3	3266
10	Sun W.	29 56 25	2765	31 31 39	2756	33 7 4	2748	34 42 40	2741
	Spica E.	63 54 52	2460	62 12 42	2453	60 30 22	2445	58 47 52	2438
	Antares E.	109 33 22	2453	107 51 2	2445	106 8 32	2438	104 25 51	2431
11	Sun W.	42 43 2	2706	44 19 34	2699	45 56 15	2694	47 33 3	2687
	Spica E.	50 13 3	2408	48 29 40	2403	46 46 9	2398	45 2 31	2394
	Antares E.	95 50 1	2398	94 6 23	2392	92 22 37	2387	90 38 43	2380
12	Sun W.	55 39 4	2660	57 16 38	2655	58 54 18	2650	60 32 5	2645
	Jupiter W.	19 5 25	2538	20 45 45	2514	22 26 39	2495	24 7 59	2479
	Regulus W.	18 22 2	2461	20 4 10	2440	21 46 47	2422	23 29 50	2408
	Spica E.	36 22 47	2373	34 38 34	2371	32 54 17	2368	31 9 57	2366
	Antares E.	81 57 14	2355	80 12 35	2350	78 27 49	2346	76 42 56	2342
13	Sun W.	68 42 31	2624	70 20 53	2621	71 59 19	2617	73 37 51	2613
	Jupiter W.	32 39 18	2427	34 22 15	2419	36 5 22	2412	37 48 39	2406
	Regulus W.	32 9 25	2359	33 53 58	2352	35 38 42	2346	37 23 35	2340
	Saturn W.	24 2 38	2487	25 44 10	2468	27 26 8	2451	29 8 30	2437
	Antares E.	67 57 3	2322	66 11 36	2319	64 26 4	2315	62 40 27	2312
	α Aquilæ E.	118 44 24	3026	117 14 43	3000	115 44 30	2976	114 13 47	2955
14	Sun W.	81 51 38	2599	83 30 35	2596	85 9 36	2593	86 48 41	2591
	Jupiter W.	46 27 3	2382	48 11 3	2378	49 55 9	2375	51 39 20	2371
	Regulus W.	46 9 51	2317	47 55 25	2313	49 41 5	2310	51 26 50	2307
	Saturn W.	37 44 37	2388	39 28 29	2381	41 12 31	2375	42 56 42	2369
	Antares E.	53 51 15	2298	52 5 13	2296	50 19 7	2294	48 32 58	2291
	α Aquilæ E.	106 34 15	2873	105 1 22	2861	103 28 13	2850	101 54 50	2841
15	Sun W.	95 4 49	2581	96 44 10	2580	98 23 33	2578	100 2 58	2577
	Jupiter W.	60 21 21	2358	62 5 56	2356	63 50 34	2355	65 35 14	2353
	Regulus W.	60 16 36	2294	62 2 44	2293	63 48 54	2291	65 35 7	2289
	Saturn W.	51 39 22	2348	53 24 11	2346	55 9 4	2342	56 54 2	2340

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month	Star's Name and Position.	*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	α Aquilæ W.	88 17 2	3597	89 35 40	3593	90 54 22	3590	92 13 7	3588
	Fomalhaut W.	63 15 23	3611	64 33 45	3595	65 52 25	3580	67 11 21	3566
	α Pegasi W.	40 42 44	3403	42 4 57	3381	43 27 35	3362	44 50 35	3344
	Aldebaran E.	38 34 3	3198	37 7 52	3204	35 41 48	3212	34 15 53	3221
	Sun E.	69 24 50	3430	68 3 7	3427	66 41 21	3423	65 19 31	3420
2	α Aquilæ W.	98 47 21	3581	100 6 16	3580	101 25 12	3580	102 44 8	3580
	Fomalhaut W.	73 49 49	3500	75 10 13	3488	76 30 51	3476	77 51 42	3464
	α Pegasi W.	51 50 36	3263	53 15 30	3248	54 40 42	3235	56 6 10	3221
	Aldebaran E.	27 9 28	3291	25 45 6	3315	24 21 12	3344	22 57 51	3379
	Sun E.	58 29 11	3395	57 6 49	3389	55 44 20	3383	54 21 44	3375
3	α Aquilæ W.	109 18 35	3589	110 37 21	3593	111 56 3	3598	113 14 40	3603
	Fomalhaut W.	84 39 4	3410	86 1 9	3401	87 23 24	3391	88 45 51	3382
	α Pegasi W.	63 17 31	3155	64 44 34	3143	66 11 52	3130	67 39 25	3117
	Sun E.	47 26 33	3335	46 3 2	3326	44 39 21	3316	43 15 28	3307
4	Fomalhaut W.	95 40 39	3339	97 4 5	3332	98 27 39	3325	99 51 22	3319
	α Pegasi W.	75 0 59	3056	76 30 3	3043	77 59 22	3031	79 28 56	3019
	α Arietis W.	31 34 13	2966	33 5 9	2951	34 36 23	2936	36 7 57	2922
	Sun E.	36 13 12	3254	34 48 7	3243	33 22 49	3232	31 57 18	3220
10	Sun W.	36 18 25	2734	37 54 20	2726	39 30 25	2719	41 6 39	2713
	Spica E.	57 5 12	2432	55 22 23	2426	53 39 25	2419	51 56 18	2414
	Antares E.	102 43 0	2424	101 0 0	2417	99 16 49	2411	97 33 30	2404
11	Sun W.	49 10 0	2681	50 47 5	2676	52 24 17	2670	54 1 37	2665
	Spica E.	43 18 47	2389	41 34 56	2384	39 50 58	2380	38 6 55	2377
	Antares E.	88 54 40	2375	87 10 30	2370	85 26 12	2365	83 41 47	2360
12	Sun W.	62 9 59	2641	63 47 58	2637	65 26 3	2632	67 4 14	2628
	Jupiter W.	25 49 41	2466	27 31 43	2455	29 14 0	2444	30 56 33	2435
	Regulus W.	25 13 13	2395	26 56 55	2385	28 40 51	2375	30 25 2	2366
	Spica E.	29 25 34	2365	27 41 9	2364	25 56 43	2366	24 12 19	2367
	Antares E.	74 57 57	2337	73 12 52	2333	71 27 41	2330	69 42 25	2326
13	Sun W.	75 16 28	2610	76 55 9	2607	78 33 54	2604	80 12 44	2601
	Jupiter W.	39 32 5	2401	41 15 39	2396	42 59 20	2391	44 43 8	2386
	Regulus W.	39 8 36	2335	40 53 44	2329	42 39 1	2326	44 24 23	2322
	Saturn W.	30 51 12	2424	32 34 12	2413	34 17 28	2405	36 0 56	2396
	Antares E.	60 54 45	2309	59 8 59	2306	57 23 8	2303	55 37 13	2301
	α Aquilæ E.	112 42 38	2936	111 11 5	2917	109 39 8	2901	108 6 51	2887
14	Sun W.	88 27 49	2589	90 6 59	2586	91 46 13	2584	93 25 30	2582
	Jupiter W.	53 23 36	2368	55 7 57	2366	56 52 21	2363	58 36 50	2361
	Regulus W.	53 12 39	2304	54 58 33	2302	56 44 30	2299	58 30 32	2297
	Saturn W.	44 41 1	2364	46 25 27	2360	48 10 0	2356	49 54 38	2352
	Antares E.	46 46 45	2289	45 0 30	2288	43 14 13	2286	41 27 53	2285
	α Aquilæ E.	100 21 16	2832	98 47 30	2825	97 13 35	2819	95 39 32	2815
15	Sun W.	101 42 25	2576	103 21 53	2575	105 1 22	2574	106 40 53	2574
	Jupiter W.	67 19 57	2351	69 4 42	2350	70 49 28	2349	72 34 16	2349
	Regulus W.	67 21 23	2288	69 7 40	2287	70 53 59	2286	72 40 19	2285
	Saturn W.	58 39 3	2338	60 24 7	2336	62 9 14	2335	63 54 23	2333

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LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	*Noon.*	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
15	Antares E.	39 41 31	2283	37 55 6	2283	36 8 41	2281	34 22 13	2281
	α Aquilæ E.	94 5 23	2811	92 31 9	2807	90 56 50	2806	89 22 30	2805
	Fomalhaut E.	119 6 12	2850	117 32 49	2829	115 58 59	2812	114 24 47	2796
16	Sun W.	108 20 23	2573	109 59 55	2574	111 39 26	2574	113 18 57	2574
	Regulus W.	74 26 40	2285	76 13 2	2284	77 59 25	2284	79 45 48	2285
	Jupiter W.	74 19 4	2348	76 3 54	2348	77 48 43	2348	79 33 33	2348
	Saturn W.	65 39 34	2333	67 24 46	2331	69 10 0	2330	70 55 15	2331
	Spica W.	20 28 15	2323	22 13 41	2316	23 59 17	2311	25 45 1	2306
	Antares E.	25 29 48	2281	23 43 20	2282	21 56 54	2284	20 10 31	2286
	α Aquilæ E.	81 31 0	2817	79 56 54	2823	78 22 56	2831	76 49 8	2839
	Fomalhaut E.	106 29 12	2738	104 53 23	2730	103 17 23	2723	101 41 14	2718
17	Sun W.	121 36 20	2579	123 15 44	2581	124 55 5	2583	126 34 23	2585
	Regulus W.	88 37 32	2289	90 23 48	2290	92 10 2	2292	93 56 14	2294
	Jupiter W.	88 17 33	2352	90 2 17	2354	91 46 58	2355	93 31 37	2358
	Saturn W.	79 41 25	2333	81 26 36	2335	83 11 45	2336	84 56 52	2339
	Spica W.	34 34 52	2297	36 20 56	2297	38 7 0	2297	39 53 4	2298
	α Aquilæ E.	69 3 25	2903	67 31 10	2921	65 59 18	2940	64 27 50	2963
	Fomalhaut E.	93 39 10	2706	92 2 38	2707	90 26 7	2708	88 49 38	2711
	α Pegasi E.	114 54 17	2447	113 11 49	2444	111 29 16	2442	109 46 41	2441
18	Regulus W.	102 46 18	2309	104 32 5	2313	106 17 46	2317	108 3 21	2321
	Jupiter W.	102 13 53	2373	103 58 7	2377	105 42 14	2381	107 26 16	2387
	Saturn W.	93 41 32	2353	95 26 15	2357	97 10 52	2361	98 55 23	2365
	Spica W.	48 42 52	2308	50 28 40	2311	52 14 23	2315	54 0 1	2318
	α Aquilæ E.	56 58 27	3111	55 30 31	3150	54 3 22	3193	52 37 5	3241
	Fomalhaut E.	80 48 32	2739	79 12 44	2747	77 37 7	2758	76 1 44	2769
	α Pegasi E.	101 13 32	2442	99 30 57	2444	97 48 25	2447	96 5 57	2450
19	Saturn W.	107 36 11	2393	109 19 56	2400	111 3 31	2407	112 46 56	2414
	Spica W.	62 46 41	2342	64 31 39	2348	66 16 29	2354	68 1 10	2360
	Antares W.	17 6 9	2349	18 50 57	2353	20 35 40	2357	22 20 17	2362
	α Aquilæ E.	45 41 28	3563	44 22 13	3649	43 4 31	3745	41 48 31	3852
	Fomalhaut E.	68 9 3	2845	66 35 34	2865	65 2 30	2887	63 29 54	2910
	α Pegasi E.	87 35 4	2475	85 53 15	2482	84 11 37	2489	82 30 8	2497
20	Spica W.	76 42 7	2397	78 25 46	2406	80 9 12	2414	81 52 26	2423
	Antares W.	31 1 14	2395	32 44 56	2404	34 28 25	2412	36 11 43	2420
	Fomalhaut E.	55 55 9	3060	54 26 10	3098	52 57 58	3139	51 30 36	3183
	α Pegasi E.	74 5 44	2544	72 25 32	2556	70 45 37	2568	69 5 58	2581
	α Arietis E.	116 45 11	2412	115 1 53	2419	113 18 46	2427	111 35 50	2436
21	Spica W.	90 25 18	2472	92 7 10	2483	93 48 47	2494	95 30 9	2505
	Antares W.	44 44 58	2469	46 26 55	2479	48 8 38	2490	49 50 5	2501
	Fomalhaut E.	44 28 45	3479	43 7 57	3557	41 48 36	3643	40 30 48	3737
	α Pegasi E.	60 52 25	2656	59 14 46	2673	57 37 30	2692	56 0 39	2711
	α Arietis E.	103 4 25	2484	101 22 49	2494	99 41 28	2505	98 0 21	2516
22	Spica W.	103 52 59	2564	105 32 43	2576	107 12 11	2589	108 51 21	2602
	Antares W.	58 13 27	2559	59 53 18	2571	61 32 53	2583	63 12 11	2596
	Fomalhaut E.	34 30 1	4404	33 24 43	4592	32 22 11	4806	31 22 40	5050
	α Pegasi E.	48 3 20	2826	46 29 26	2853	44 56 7	2883	43 23 27	2915

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Day of the Month.	Star's Name and Position.		*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
15	Antares	E.	32 35 45	2280	30 49 16	2280	29 2 47	2279	27 16 17	2280
	α Aquilæ	E.	87 48 8	2805	86 13 47	2806	84 39 27	2809	83 5 11	2813
	Fomalhaut	E.	112 50 14	2782	111 15 22	2769	109 40 13	2757	108 4 49	2747
16	Sun	W.	114 58 28	2574	116 37 58	2575	118 17 27	2577	119 56 54	2578
	Regulus	W.	81 32 10	2285	83 18 32	2285	85 4 53	2286	86 51 13	2287
	Jupiter	W.	81 18 23	2348	83 3 12	2349	84 48 1	2350	86 32 48	2351
	Saturn	W.	72 40 29	2331	74 25 44	2331	76 10 59	2331	77 56 13	2333
	Spica	W.	27 30 52	2302	29 16 48	2300	31 2 47	2298	32 48 49	2298
	Antares	E.	18 24 10	2289	16 37 54	2293	14 51 45	2299	13 5 44	2308
	α Aquilæ	E.	75 15 30	2849	73 42 5	2860	72 8 55	2873	70 36 1	2887
	Fomalhaut	E.	100 4 58	2714	98 28 37	2710	96 52 10	2708	95 15 41	2707
17	Sun	W.	128 13 39	2588	129 52 51	2590	131 31 59	2593	133 11 3	2597
	Regulus	W.	95 42 22	2296	97 28 28	2299	99 14 29	2302	101 0 26	2305
	Jupiter	W.	95 16 12	2360	97 0 44	2364	98 45 11	2366	100 29 35	2370
	Saturn	W.	86 41 55	2340	88 26 56	2343	90 11 52	2346	91 56 45	2350
	Spica	W.	41 39 6	2299	43 25 7	2301	45 11 5	2303	46 57 0	2305
	α Aquilæ	E.	62 56 51	2987	61 26 22	3013	59 56 26	3043	58 27 6	3076
	Fomalhaut	E.	87 13 12	2715	85 36 52	2719	84 0 37	2725	82 24 30	2732
	α Pegasi	E.	108 4 4	2440	106 21 26	2439	104 38 47	2439	102 56 8	2441
18	Regulus	W.	109 48 50	2326	111 34 12	2331	113 19 27	2337	115 4 33	2342
	Jupiter	W.	109 10 10	2391	110 53 58	2396	112 37 38	2402	114 21 10	2408
	Saturn	W.	100 39 48	2370	102 24 6	2375	104 8 16	2381	105 52 18	2387
	Spica	W.	55 45 34	2322	57 31 1	2326	59 16 22	2332	61 1 35	2337
	α Aquilæ	E.	51 11 44	3293	49 47 24	3351	48 24 11	3414	47 2 10	3484
	Fomalhaut	E.	74 26 36	2782	72 51 44	2795	71 17 10	2811	69 42 56	2827
	α Pegasi	E.	94 23 34	2454	92 41 16	2459	90 59 5	2463	89 17 0	2469
19	Saturn	W.	114 30 11	2422	116 13 14	2431	117 56 5	2439	119 38 45	2448
	Spica	W.	69 45 42	2367	71 30 4	2374	73 14 16	2382	74 58 17	2389
	Antares	W.	24 4 47	2368	25 49 8	2374	27 33 20	2381	29 17 23	2389
	α Aquilæ	E.	40 34 23	3972	39 22 15	4107	38 12 20	4258	37 4 48	4428
	Fomalhaut	E.	61 57 48	2935	60 26 14	2962	58 55 14	2992	57 24 52	3024
	α Pegasi	E.	80 48 50	2505	79 7 44	2514	77 26 50	2524	75 46 10	2534
20	Spica	W.	83 35 28	2433	85 18 16	2442	87 0 51	2452	88 43 12	2462
	Antares	W.	37 54 49	2430	39 37 41	2439	41 20 21	2449	43 2 46	2458
	Fomalhaut	E.	50 4 7	3233	48 38 37	3287	47 14 10	3345	45 50 51	3409
	α Pegasi	E.	67 26 37	2594	65 47 34	2608	64 8 50	2623	62 30 27	2639
	α Arietis	E.	109 53 7	2445	108 10 36	2455	106 28 19	2464	104 46 15	2474
21	Spica	W.	97 11 15	2516	98 52 6	2528	100 32 40	2540	102 12 57	2551
	Antares	W.	51 31 17	2512	53 12 14	2524	54 52 54	2535	56 33 19	2547
	Fomalhaut	E.	39 14 40	3842	38 0 21	3960	36 48 2	4091	35 37 51	4238
	α Pegasi	E.	54 24 14	2731	52 48 16	2753	51 12 46	2776	49 37 47	2801
	α Arietis	E.	96 19 30	2527	94 38 55	2538	92 58 35	2550	91 18 32	2561
22	Spica	W.	110 30 13	2614	112 8 49	2628	113 47 6	2640	115 25 7	2654
	Antares	W.	64 51 11	2609	66 29 54	2621	68 8 20	2634	69 46 29	2647
	Fomalhaut	E.	30 26 24	5332	29 33 40	5658	28 44 45	6038	27 59 56	6484
	α Pegasi	E.	41 51 27	2949	40 20 10	2985	38 49 39	3025	37 19 57	3069

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Day of the Month	Star's Name and Position.	*Noon.*	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
22	α Arietis E.	89 38 44	2574	87 59 14	2586	86 20 0	2599	84 41 4	2612
23	Antares W.	71 24 20	2660	73 1 53	2673	74 39 9	2686	76 16 7	2699
	α Pegasi E.	35 51 10	3116	34 23 20	3169	32 56 34	3228	31 30 58	3294
	α Arietis E.	76 30 44	2677	74 53 33	2690	73 16 40	2704	71 40 5	2717
	Aldebaran E.	109 8 51	2712	107 32 27	2724	105 56 19	2737	104 20 28	2749
24	Antares W.	84 16 37	2765	85 51 51	2778	87 26 48	2791	89 1 28	2803
	α Aquilæ W.	39 29 11	4369	40 35 0	4279	41 42 12	4200	42 50 38	4131
	α Arietis E.	63 41 40	2785	62 6 52	2799	60 32 23	2812	58 58 11	2825
	Aldebaran E.	96 25 18	2812	94 51 6	2824	93 17 10	2837	91 43 30	2850
25	Antares W.	96 50 45	2865	98 23 49	2876	99 56 38	2887	101 29 13	2899
	α Aquilæ W.	48 47 20	3884	50 0 56	3850	51 15 7	3820	52 29 49	3793
	α Arietis E.	51 11 32	2892	49 39 3	2905	48 6 51	2918	46 34 55	2931
	Aldebaran E.	83 59 15	2912	82 27 11	2924	80 55 23	2936	79 23 50	2947
	Sun E.	137 53 2	3213	136 27 8	3225	135 1 29	3238	133 36 5	3250
26	Antares W.	109 8 35	2951	110 39 49	2961	112 10 59	2970	113 41 40	2980
	α Aquilæ W.	58 49 20	3698	60 6 9	3685	61 23 12	3673	62 40 28	3663
	Fomalhaut W.	35 41 22	4507	36 45 8	4407	37 50 23	4320	38 56 57	4243
	α Arietis E.	38 59 22	2996	37 29 4	3008	35 59 1	3022	34 29 15	3035
	Aldebaran E.	71 49 41	3004	70 19 33	3014	68 49 38	3025	67 19 56	3035
	Sun E.	126 32 31	3307	125 8 27	3317	123 44 35	3327	122 20 55	3337
27	α Aquilæ W.	69 9 5	3628	70 27 9	3623	71 45 18	3619	73 3 32	3616
	Fomalhaut W.	44 45 43	3962	45 58 0	3921	47 10 58	3885	48 24 33	3852
	α Pegasi W.	21 59 35	4230	23 7 33	4095	24 17 39	3983	25 29 35	3890
	Aldebaran E.	59 54 27	3082	58 25 56	3091	56 57 35	3099	55 29 24	3108
	Sun E.	115 25 11	3379	114 2 31	3386	112 39 58	3393	111 17 34	3399
28	α Aquilæ W.	79 35 28	3604	80 53 58	3602	82 12 30	3601	83 31 3	3600
	Fomalhaut W.	54 40 3	3725	55 56 24	3704	57 13 7	3686	58 30 9	3669
	α Pegasi W.	31 48 55	3593	33 7 37	3555	34 27 1	3522	35 47 1	3492
	Aldebaran E.	48 10 59	3147	46 43 46	3154	45 16 42	3162	43 49 48	3169
	Sun E.	104 27 7	3423	103 5 17	3427	101 43 31	3430	100 21 49	3432
29	α Aquilæ W.	90 4 1	3598	91 22 38	3598	92 41 15	3598	93 59 52	3598
	Fomalhaut W.	64 59 37	3596	66 18 16	3583	67 37 9	3571	68 56 15	3559
	α Pegasi W.	42 34 17	3381	43 56 55	3365	45 19 52	3349	46 43 7	3333
	Aldebaran E.	36 37 35	3212	35 11 40	3221	33 45 56	3233	32 20 26	3245
	Sun E.	93 33 44	3437	92 12 9	3436	90 50 33	3435	89 28 56	3432
30	α Aquilæ W.	100 32 49	3601	101 51 22	3603	103 9 53	3606	104 28 21	3607
	Fomalhaut W.	75 34 50	3506	76 55 8	3496	78 15 37	3486	79 36 17	3476
	α Pegasi W.	53 43 31	3267	55 8 21	3254	56 33 26	3242	57 58 45	3230
	Aldebaran E.	25 17 19	3343	23 53 57	3374	22 31 11	3413	21 9 9	3462
	Sun E.	82 40 6	3416	81 18 8	3411	79 56 4	3406	78 33 54	3400
31	α Aquilæ W.	111 0 1	3626	112 18 8	3631	113 36 9	3637	114 54 3	3645
	Fomalhaut W.	86 22 19	3429	87 44 3	3420	89 5 57	3411	90 28 1	3403
	α Pegasi W.	65 8 52	3171	66 35 36	3159	68 2 34	3147	69 29 47	3135
	α Arietis W.	21 32 16	3124	22 59 56	3101	24 28 4	3081	25 56 37	3062
	Sun E.	71 41 13	2264	70 18 15	3355	68 55 7	3345	67 31 48	3336

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Day of the Month	Star's Name and Position.	*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
22	α Arietis E.	83 2 25	2624	81 24 3	2637	79 45 59	2651	78 8 13	2663
23	Antares W.	77 52 48	2713	79 29 11	2726	81 5 17	2738	82 41 6	2752
	α Pegasi E.	30 6 40	3368	28 43 47	3452	27 22 29	3548	26 2 58	3661
	α Arietis E.	70 3 48	2731	68 27 49	2744	66 52 8	2758	65 16 45	2772
	Aldebaran E.	102 44 53	2761	101 9 34	2774	99 34 32	2787	97 59 47	2799
24	Antares W.	90 35 52	2816	92 9 59	2828	93 43 51	2841	95 17 26	2853
	α Aquilæ W.	44 0 10	4069	45 10 42	4014	46 22 8	3965	47 34 23	3922
	α Arietis E.	57 24 16	2839	55 50 39	2853	54 17 20	2866	52 44 17	2880
	Aldebaran E.	90 10 7	2862	88 37 0	2875	87 4 9	2887	85 31 34	2900
25	Antares W.	103 1 33	2911	104 33 38	2921	106 5 31	2932	107 37 9	2942
	α Aquilæ W.	53 44 59	3769	55 0 33	3747	56 16 30	3729	57 32 46	3712
	α Arietis E.	45 3 16	2945	43 31 54	2957	42 0 47	2970	40 29 57	2982
	Aldebaran E.	77 52 31	2960	76 21 28	2971	74 50 38	2982	73 20 3	2993
	Sun E.	132 10 55	3262	130 45 59	3274	129 21 17	3284	127 56 47	3296
26	Antares W.	115 12 18	2988	116 42 46	2997	118 13 3	3004	119 43 11	3012
	α Aquilæ W.	63 57 54	3654	65 15 30	3647	66 33 14	3639	67 51 6	3633
	Fomalhaut W.	40 4 43	4174	41 13 34	4111	42 23 25	4056	43 34 10	4007
	α Arietis E.	32 59 45	3048	31 30 31	3061	30 1 34	3076	28 32 55	3091
	Aldebaran E.	65 50 26	3045	64 21 9	3055	62 52 4	3064	61 23 10	3073
	Sun E.	120 57 26	3345	119 34 7	3355	118 10 59	3364	116 48 1	3371
27	α Aquilæ W.	74 21 49	3612	75 40 10	3610	76 58 34	3608	78 17 0	3606
	Fomalhaut W.	49 38 42	3822	50 53 21	3794	52 8 30	3769	53 24 4	3746
	α Pegasi W.	26 43 5	3811	27 57 56	3743	29 13 57	3685	30 31 0	3636
	Aldebaran E.	54 1 24	3116	52 33 34	3124	51 5 53	3131	49 38 21	3139
	Sun E.	109 55 16	3405	108 33 5	3411	107 11 1	3415	105 49 1	3420
28	α Aquilæ W.	84 49 37	3599	86 8 13	3599	87 26 48	3598	88 45 25	3598
	Fomalhaut W.	59 47 29	3652	61 5 7	3636	62 23 2	3622	63 41 12	3609
	α Pegasi W.	37 7 34	3465	38 28 37	3442	39 50 6	3420	41 12 0	3400
	Aldebaran E.	42 23 2	3177	40 56 26	3185	39 29 59	3193	38 3 42	3202
	Sun E.	99 0 9	3434	97 38 31	3436	96 16 55	3436	94 55 19	3437
29	α Aquilæ W.	95 18 29	3598	96 37 5	3599	97 55 41	3600	99 14 15	3600
	Fomalhaut W.	70 15 34	3548	71 35 5	3537	72 54 48	3526	74 14 43	3516
	α Pegasi W.	48 6 40	3319	49 30 29	3305	50 54 35	3293	52 18 55	3279
	Aldebaran E.	30 55 10	3259	29 30 11	3275	28 5 30	3294	26 41 12	3316
	Sun E.	88 7 16	3431	86 45 34	3428	85 23 49	3424	84 2 0	3420
30	α Aquilæ W.	105 46 48	3610	107 5 12	3613	108 23 32	3616	109 41 49	3621
	Fomalhaut W.	80 57 8	3466	82 18 10	3457	83 39 22	3447	85 0 45	3438
	α Pegasi W.	59 24 19	3219	60 50 6	3207	62 16 7	3194	63 42 23	3183
	Aldebaran E.	19 48 3	3523	18 28 4	3600	17 9 30	3700	15 52 43	3828
	Sun E.	77 11 38	3393	75 49 14	3386	74 26 42	3379	73 4 2	3372
31	α Aquilæ W.	116 11 49	3653	117 29 26	3663	118 46 53	3674	120 4 8	3686
	Fomalhaut W.	91 50 14	3394	93 12 38	3385	94 35 12	3377	95 57 55	3369
	α Pegasi W.	70 57 14	3122	72 24 57	3110	73 52 54	3098	75 21 6	3085
	α Arietis W.	27 25 33	3044	28 54 51	3027	30 24 31	3011	31 54 30	2995
	Sun E.	66 8 18	3326	64 44 37	3316	63 20 44	3305	61 56 38	3294

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Day of the Month.	Airy's Day Numbers—For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of E	F	G	H	Value of L
1	1·45129	0·68728	0·30949	1·36625	91·366
2	1·45598	0·69280	0·31026	1·36628	90·830
3	1·46060	0·69872	0·31103	1·36630	90·291
4	1·46516	0·70505	0·31179	1·36631	89·747
5	1·46965	0·71174	0·31254	1·36631	89·199
6	1·47408	0·71878	0·31329	1·36630	88·648
7	1·47845	0·72616	0·31404	1·36628	88·092
8	1·48275	0·73385	0·31478	1·36625	87·532
9	1·48699	0·74183	0·31552	1·36621	86·969
10	1·49117	0·75009	0·31625	1·36616	86·401
11	1·49529	0·75860	0·31698	1·36610	85·830
12	1·49934	0·76733	0·31770	1·36603	85·255
13	1·50334	0·77628	0·31842	1·36596	84·678
14	1·50727	0·78544	0·31913	1·36588	84·097
15	1·51113	0·79476	0·31984	1·36579	83·514
16	1·51495	0·80426	0·32054	1·36569	82·927
17	1·51869	0·81389	0·32123	1·36558	82·340
18	1·52238	0·82365	0·32192	1·36547	81·749
19	1·52600	0·83352	0·32261	1·36535	81·156
20	1·52956	0·84348	0·32329	1·36522	80·559
21	1·53307	0·85352	0·32397	1·36508	79·960
22	1·53651	0·86364	0·32464	1·36494	79·359
23	1·53990	0·87383	0·32530	1·36479	78·757
24	1·54322	0·88405	0·32596	1·36464	78·154
25	1·54649	0·89432	0·32661	1·36448	77·548
26	1·54970	0·90459	0·32725	1·36432	76·941
27	1·55286	0·91487	0·32788	1·36416	76·334
28	1·55595	0·92516	0·32851	1·36398	75·725
29	1·55899	0·93545	0·32913	1·36380	75·115
30	1·56196	0·94574	0·32975	1·36362	74·503
31	1·56488	0·95602	0·33036	1·36344	73·891
32	1·56775	0·96626	0·33097	1·36326	73·277

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Day of the Month.	Bessel's Day Numbers— For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of A	B	C	D	Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0d·96193. Days.	From Mean Noon of January 1. Day of the Year.	Fraction of the Year.*
					h m s			
1	+0·5142	−1·3039	+9·9239	−0·2454	17 19 4·41	100	181	·4956
2	0·5532	1·3026	9·9258	0·2450	17 15 8·50	101	182	·4983
3	0·5888	1·3011	9·9277	0·2447	17 11 12·59	102	183	·5010
4	+0·6217	−1·2995	+9·9295	−0·2446	17 7 16·67	103	184	·5038
5	0·6521	1·2978	9·9313	0·2446	17 3 20·76	104	185	·5065
6	0·6804	1·2959	9·9331	0·2447	16 59 24·85	105	186	·5093
7	+0·7069	−1·2940	+9·9349	−0·2450	16 55 28·94	106	187	·5120
8	0·7317	1·2919	9·9367	0·2454	16 51 33·03	107	188	·5147
9	0·7551	1·2896	9·9384	0·2459	16 47 37·11	108	189	·5175
10	+0·7772	−1·2873	+9·9402	−0·2466	16 43 41·20	109	190	·5202
11	0·7981	1·2848	9·9419	0·2473	16 39 45·29	110	191	·5229
12	0·8179	1·2821	9·9436	0·2482	16 35 49·38	111	192	·5257
13	+0·8368	−1·2793	+9·9453	−0·2492	16 31 53·47	112	193	·5284
14	0·8547	1·2764	9·9470	0·2503	16 27 57·55	113	194	·5312
15	0·8718	1·2734	9·9487	0·2515	16 24 1·64	114	195	·5339
16	+0·8882	−1·2702	+9·9503	−0·2528	16 20 5·73	115	196	·5366
17	0·9038	1·2668	9·9520	0·2542	16 16 9·82	116	197	·5394
18	0·9188	1·2633	9·9536	0·2557	16 12 13·91	117	198	·5421
19	+0·9332	−1·2597	+9·9552	−0·2572	16 8 18·00	118	199	·5448
20	0·9470	1·2559	9·9568	0·2588	16 4 22·09	119	200	·5476
21	0·9602	1·2519	9·9583	0·2606	16 0 26·18	120	201	·5503
22	+0·9730	−1·2478	+9·9599	−0·2624	15 56 30·27	121	202	·5531
23	0·9852	1·2436	9·9614	0·2642	15 52 34·35	122	203	·5558
24	0·9970	1·2391	9·9629	0·2661	15 48 38·44	123	204	·5585
25	+1·0084	−1·2345	+9·9644	−0·2681	15 44 42·53	124	205	·5613
26	1·0194	1·2298	9·9659	0·2701	15 40 46·62	125	206	·5640
27	1·0300	1·2248	9·9674	0·2722	15 36 50·71	126	207	·5667
28	+1·0402	−1·2197	+9·9688	−0·2743	15 32 54·80	127	208	·5695
29	1·0501	1·2143	9·9702	0·2764	15 28 58·89	128	209	·5722
30	1·0597	1·2088	9·9716	0·2786	15 25 2·98	129	210	·5750
31	1·0689	1·2031	9·9730	0·2808	15 21 7·07	130	211	·5777
32	+1·0778	−1·1972	+9·9744	−0·2830	15 17 11·16	131	212	·5804

* Add ·0031 if Fraction be required for the time t, see page 327.

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AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 hour.	THE SUN'S Apparent Declination.	Diff. for 1 hour.	Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, *to be added to* / *subt. from* Apparent Time.	Diff. for 1 hour.
		h m s	s	° ′ ″	″	m s	m s	s
Thur.	1	8 46 20·09	9·696	N.17 58 57·5	38·32	1 6·61	6 0·93	0·160
Frid.	2	8 50 12·79	9·672	17 43 37·9	39·04	1 6·53	5 57·09	0·184
Sat.	3	8 54 4·90	9·647	17 28 0·9	39·75	1 6·45	5 52·66	0·209
Sun.	4	8 57 56·43	9·622	17 12 6·8	40·45	1 6·36	5 47·64	0·234
Mon.	5	9 1 47·36	9·597	16 55 56·0	41·14	1 6·28	5 42·03	0·259
Tues.	6	9 5 37·69	9·573	16 39 28·7	41·81	1 6·19	5 35·82	0·283
Wed.	7	9 9 27·43	9·548	16 22 45·2	42·47	1 6·11	5 29·02	0·308
Thur.	8	9 13 16·57	9·524	16 5 45·9	43·12	1 6·02	5 21·63	0·332
Frid.	9	9 17 5·13	9·499	15 48 31·2	43·75	1 5·94	5 13·65	0·357
Sat.	10	9 20 53·10	9·475	15 31 1·3	44·37	1 5·85	5 5·09	0·381
Sun.	11	9 24 40·48	9·450	15 13 16·5	44·97	1 5·77	4 55·94	0·405
Mon.	12	9 28 27·27	9·426	14 55 17·3	45·56	1 5·69	4 46·21	0·429
Tues.	13	9 32 13·49	9·402	14 37 3·9	46·14	1 5·61	4 35·90	0·453
Wed.	14	9 35 59·14	9·379	14 18 36·6	46·71	1 5·53	4 25·03	0·476
Thur.	15	9 39 44·24	9·357	13 59 55·7	47·26	1 5·45	4 13·60	0·499
Frid.	16	9 43 28·80	9·335	13 41 1·5	47·80	1 5·38	4 1·63	0·521
Sat.	17	9 47 12·82	9·313	13 21 54·3	48·33	1 5·30	3 49·14	0·543
Sun.	18	9 50 56·32	9·292	13 2 34·5	48·84	1 5·23	3 36·12	0·564
Mon.	19	9 54 39·31	9·271	12 43 2·3	49·34	1 5·16	3 22·60	0·584
Tues.	20	9 58 21·82	9·252	12 23 18·1	49·83	1 5·09	3 8·59	0·604
Wed.	21	10 2 3·86	9·232	12 3 22·2	50·31	1 5·02	2 54·10	0·623
Thur.	22	10 5 45·43	9·214	11 43 14·7	50·78	1 4·95	2 39·15	0·641
Frid.	23	10 9 26·55	9·196	11 22 56·0	51·24	1 4·88	2 23·76	0·658
Sat.	24	10 13 7·26	9·179	11 2 26·3	51·68	1 4·82	2 7·97	0·675
Sun.	25	10 16 47·57	9·163	10 41 46·0	52·11	1 4·76	1 51·77	0·692
Mon.	26	10 20 27·48	9·147	10 20 55·4	52·53	1 4·70	1 35·16	0·707
Tues.	27	10 24 7·01	9·132	9 59 54·9	52·93	1 4·64	1 18·19	0·722
Wed.	28	10 27 46·18	9·118	9 38 44·7	53·32	1 4·59	1 0·86	0·736
Thur.	29	10 31 25·02	9·105	9 17 25·1	53·69	1 4·54	0 43·19	0·750
Frid.	30	10 35 3·53	9·092	8 55 56·5	54·05	1 4·49	0 25·20	0·763
Sat.	31	10 38 41·74	9·079	8 34 19·2	54·40	1 4·44	0 6·90	0·775
Sun.	32	10 42 19·64		N. 8 12 33·6		1 4·40	0 11·70	

*Mean Time of the Semidiameter passing may be found by subtracting 0s·18 from the *Sidereal* Time.

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AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S *Apparent* Right Ascension.	THE SUN'S *Apparent* Declination.	THE SUN'S Semidiam.*	Equation of Time, *to be subt. from* / *added to Mean Time.*	Sidereal Time.
		h m s	° ′ ″	′ ″	m s	h m s
Thur.	1	8 46 19·12	N.17 59 1·3	15 47·9	6 0·95	8 40 18·17
Frid.	2	8 50 11·83	17 43 41·8	15 48·1	5 57·11	8 44 14·73
Sat.	3	8 54 3·96	17 28 4·9	15 48·2	5 52·68	8 48 11·28
Sun.	4	8 57 55·50	17 12 10·8	15 48·3	5 47·66	8 52 7·84
Mon.	5	9 1 46·45	16 55 59·9	15 48·5	5 42·05	8 56 4·40
Tues.	6	9 5 36·80	16 39 32·6	15 48·6	5 35·85	9 0 0·95
Wed.	7	9 9 26·56	16 22 49·1	15 48·8	5 29·05	9 3 57·51
Thur.	8	9 13 15·72	16 5 49·8	15 48·9	5 21·66	9 7 54·06
Frid.	9	9 17 4·30	15 48 35·0	15 49·1	5 13·68	9 11 50·62
Sat.	10	9 20 52·29	15 31 5·0	15 49·2	5 5·12	9 15 47·17
Sun.	11	9 24 39·70	15 13 20·2	15 49·4	4 55·97	9 19 43·73
Mon.	12	9 28 26·52	14 55 20·9	15 49·6	4 46·23	9 23 40·28
Tues.	13	9 32 12·77	14 37 7·4	15 49·8	4 35·93	9 27 36·84
Wed.	14	9 35 58·45	14 18 40·0	15 50·0	4 25·06	9 31 33·39
Thur.	15	9 39 43·58	13 59 59·0	15 50·1	4 13·63	9 35 29·95
Frid.	16	9 43 28·17	13 41 4·7	15 50·3	4 1·67	9 39 26·50
Sat.	17	9 47 12·23	13 21 57·4	15 50·5	3 49·17	9 43 23·06
Sun.	18	9 50 55·76	13 2 37·5	15 50·7	3 36·15	9 47 19·61
Mon.	19	9 54 38·79	12 43 5·2	15 50·9	3 22·62	9 51 16·17
Tues.	20	9 58 21·34	12 23 20·8	15 51·1	3 8·62	9 55 12·72
Wed.	21	10 2 3·41	12 3 24·6	15 51·3	2 54·13	9 59 9·28
Thur.	22	10 5 45·01	11 43 16·9	15 51·5	2 39·18	10 3 5·83
Frid.	23	10 9 26·18	11 22 58·0	15 51·7	2 23·79	10 7 2·39
Sat.	24	10 13 6·94	11 2 28·1	15 51·9	2 8·00	10 10 58·94
Sun.	25	10 16 47·29	10 41 47·6	15 52·1	1 51·79	10 14 55·50
Mon.	26	10 20 27·24	10 20 56·8	15 52·3	1 35·18	10 18 52·05
Tues.	27	10 24 6·81	9 59 56·0	15 52·5	1 18·20	10 22 48·61
Wed.	28	10 27 46·03	9 38 45·6	15 52·8	1 0·87	10 26 45·16
Thur.	29	10 31 24·91	9 17 25·7	15 53·0	0 43·20	10 30 41·71
Frid.	30	10 35 3·47	8 55 56·9	15 53·2	0 25·21	10 34 38·26
Sat.	31	10 38 41·72	8 34 19·3	15 53·4	0 6·90	10 38 34·82
Sun.	32	10 42 19·67	N. 8 12 33·4	15 53·6	0 11·70	10 42 31·37

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

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MEAN TIME.

Day of the Month.	THE SUN'S *Apparent* Longitude. *Noon.*	THE SUN'S *Apparent* Latitude. *Noon.*	Logarithm of the Radius Vector of the Earth. *Noon.*	THE MOON'S Semidiameter. *Noon.*	THE MOON'S Semidiameter. *Midnight.*	THE MOON'S Horizontal Parallax. *Noon.*	THE MOON'S Horizontal Parallax. *Midnight.*
	° ′ ″	″		′ ″	′ ″	′ ″	′ ″
1	129 8 29·3	N.0·67	0·0063226	15 2·1	15 6·5	55 3·1	55 19·2
2	130 5 56·7	0·54	0·0062646	15 11·4	15 16·6	55 36·9	55 56·0
3	131 3 25·4	0·41	0·0062044	15 22·1	15 27·9	56 16·3	56 37·4
4	132 0 55·3	0·28	0·0061419	15 33·7	15 39·5	56 58·8	57 20·1
5	132 58 26·3	0·15	0·0060770	15 45·3	15 50·7	57 41·1	58 1·1
6	133 55 58·3	N.0·02	0·0060099	15 55·9	16 0·6	58 19·9	58 37·2
7	134 53 31·4	S.0·08	0·0059404	16 4·8	16 8·4	58 52·5	59 5·7
8	135 51 5·6	0·15	0·0058686	16 11·4	16 13·7	59 16·7	59 25·2
9	136 48 40·8	0·20	0·0057946	16 15·4	16 16·4	59 31·4	59 35·2
10	137 46 17·0	0·22	0·0057184	16 16·9	16 16·7	59 36·7	59 36·1
11	138 43 54·1	0·22	0·0056402	16 16·0	16 14·8	59 33·6	59 29·3
12	139 41 32·1	0·18	0·0055601	16 13·2	16 11·3	59 23·5	59 16·4
13	140 39 11·1	0·11	0·0054783	16 9·0	16 6·5	59 8·1	58 58·8
14	141 36 51·1	S.0·01	0·0053948	16 3·7	16 0·7	58 48·6	58 37·6
15	142 34 32·1	N.0·09	0·0053099	15 57·5	15 54·2	58 26·0	58 13·6
16	143 32 14·1	0·22	0·0052236	15 50·6	15 46·9	58 0·7	57 47·2
17	144 29 57·3	0·35	0·0051361	15 43·1	15 39·1	57 33·2	57 18·6
18	145 27 41·7	0·48	0·0050475	15 35·1	15 30·9	57 3·7	56 48·4
19	146 25 27·3	0·60	0·0049580	15 26·7	15 22·4	56 32·9	56 17·3
20	147 23 14·2	0·71	0·0048676	15 18·1	15 13·9	56 1·7	55 46·3
21	148 21 2·5	0·80	0·0047764	15 9·8	15 5·9	55 31·3	55 17·0
22	149 18 52·3	0·86	0·0046844	15 2·2	14 58·8	55 3·5	54 51·0
23	150 16 43·7	0·89	0·0045916	14 55·8	14 53·1	54 39·8	54 30·1
24	151 14 36·8	0·90	0·0044980	14 50·9	14 49·2	54 22·1	54 15·9
25	152 12 31·6	0·87	0·0044035	14 48·1	14 47·6	54 11·8	54 9·9
26	153 10 28·1	0·81	0·0043079	14 47·7	14 48·5	54 10·4	54 13·3
27	154 8 26·5	0·72	0·0042112	14 50·0	14 52·2	54 18·6	54 26·6
28	155 6 26·8	0·62	0·0041134	14 55·0	14 58·6	54 37·1	54 50·1
29	156 4 29·0	0·50	0·0040144	15 2·8	15 7·7	55 5·6	55 23·4
30	157 2 33·2	0·37	0·0039140	15 13·1	15 19·1	55 43·2	56 5·1
31	158 0 39·3	0·23	0·0038122	15 25·4	15 32·2	56 28·4	56 53·1
32	158 58 47·3	N.0·09	0·0037089	15 39·1	15 46·1	57 18·5	57 44·3

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MEAN TIME.

THE MOON'S

Day of the Week.	Day of the Month.	Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.	Age. Noon.	Meridian Passage.
		° ′ ″	° ′ ″	° ′ ″	° ′ ″	d	h m
Thur.	1	68 38 48·9	74 46 47·1	N.2 59 9·7	N.2 30 32·0	24·4	20 28·3
Frid.	2	80 58 35·0	87 14 39·1	1 59 51·1	1 27 23·7	25·4	21 21·9
Sat.	3	93 35 21·5	100 1 0·4	N.0 53 29·0	N.0 18 28·7	26·4	22 15·7
Sun.	4	106 31 48·4	113 7 52·5	S.0 17 12·5	S.0 53 6·7	27·4	23 8·8
Mon.	5	119 49 13·0	126 35 44·1	1 28 44·0	2 3 31·7	28·4	☌
Tues.	6	133 27 12·8	140 23 19·2	2 36 56·1	3 8 22·3	29·4	0 0·6
Wed.	7	147 23 37·8	154 27 37·3	3 37 16·3	4 3 5·0	1·0	0 51·1
Thur.	8	161 34 42·1	168 44 12·8	4 25 18·6	4 43 30·2	2·0	1 40·7
Frid.	9	175 55 28·8	183 7 49·0	4 57 18·0	5 6 26·2	3·0	2 30·4
Sat.	10	190 20 33·6	197 33 5·2	5 10 43·7	5 10 6·5	4·0	3 20·9
Sun.	11	204 44 49·9	211 55 18·2	5 4 36·4	4 54 21·0	5·0	4 13·3
Mon.	12	219 4 5·3	226 10 51·2	4 39 33·0	4 20 30·4	6·0	5 8·3
Tues.	13	233 15 19·9	240 17 19·8	3 57 34·6	3 31 10·8	7·0	6 5·8
Wed.	14	247 16 42·7	254 13 23·4	3 1 47·0	2 29 53·3	8·0	7 5·0
Thur.	15	261 7 18·6	267 58 25·8	1 56 0·7	1 20 42·0	9·0	8 4·4
Frid.	16	274 46 43·8	281 32 11·2	S.0 44 29·7	S.0 7 56·5	10·0	9 2·1
Sat.	17	288 14 46·8	294 54 28·3	N.0 28 26·2	N.1 4 7·0	11·0	9 56·9
Sun.	18	301 31 13·2	308 4 58·4	1 38 38·1	2 11 31·9	12·0	10 48·0
Mon.	19	314 35 40·6	321 3 16·1	2 42 24·3	3 10 53·8	13·0	11 35·6
Tues.	20	327 27 42·0	333 48 56·7	3 36 41·9	3 59 32·9	14·0	12 20·5
Wed.	21	340 6 59·4	346 21 51·9	4 19 15·0	4 35 38·7	15·0	13 3·4
Thur.	22	352 33 38·2	358 42 25·2	4 48 37·8	4 58 8·7	16·0	13 45·2
Frid.	23	4 48 22·8	10 51 44·7	5 4 10·4	5 6 43·6	17·0	14 27·0
Sat.	24	16 52 47·4	22 51 51·0	5 5 51·3	5 1 37·7	18·0	15 9·5
Sun.	25	28 49 19·2	34 45 37·9	4 54 8·6	4 43 29·9	19·0	15 53·4
Mon.	26	40 41 16·7	46 36 47·1	4 29 49·7	4 13 15·5	20·0	16 39·4
Tues.	27	52 32 43·1	58 29 40·6	3 53 56·2	3 32 1·4	21·0	17 27·6
Wed.	28	64 28 16·7	70 29 10·0	3 7 41·3	2 41 7·3	22·0	18 18·1
Thur.	29	76 32 58·7	82 40 21·4	2 12 32·0	1 42 9·0	23·0	19 10·1
Frid.	30	88 51 55·3	95 8 16·1	1 10 14·0	N.0 37 4·8	24·0	20 3·0
Sat.	31	101 29 56·0	107 57 23·7	N.0 3 1·3	S.0 31 33·3	25·0	20 55·9
Sun.	32	114 31 2·2	121 11 8·0	S.1 6 13·9	S.1 40 31·7	26·0	21 48·1

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MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 1.		
	h m s	° ′ ″	″
0	4 25 37·15	N.24 42 37·8	25·38
1	4 27 51·34	24 45 10·1	24·15
2	4 30 5·73	24 47 35·0	22·92
3	4 32 20·32	24 49 52·5	21·68
4	4 34 35·10	24 52 2·6	20·44
5	4 36 50·08	24 54 5·3	19·19
6	4 39 5·25	24 56 0·4	17·94
7	4 41 20·60	24 57 48·0	16·68
8	4 43 36·14	24 59 28·1	15·41
9	4 45 51·86	25 1 0·6	14·14
10	4 48 7·76	25 2 25·4	12·86
11	4 50 23·83	25 3 42·6	11·58
12	4 52 40·07	25 4 52·1	10·30
13	4 54 56·47	25 5 53·9	9·01
14	4 57 13·04	25 6 47·9	7·71
15	4 59 29·77	25 7 34·2	6·41
16	5 1 46·66	25 8 12·6	5·10
17	5 4 3·70	25 8 43·2	3·79
18	5 6 20·88	25 9 6·0	2·48
19	5 8 38·22	25 9 20·9	1·16
20	5 10 55·69	25 9 27·9	0·16
21	5 13 13·30	25 9 27·0	1·48
22	5 15 31·04	25 9 18·1	2·81
23	5 17 48·91	N.25 9 1·2	4·15
	FRIDAY 2.		
0	5 20 6·91	N.25 8 36·3	5·48
1	5 22 25·03	25 8 3·4	6·82
2	5 24 43·26	25 7 22·5	8·16
3	5 27 1·61	25 6 33·5	9·51
4	5 29 20·07	25 5 36·5	10·86
5	5 31 38·63	25 4 31·3	12·21
6	5 33 57·29	25 3 18·1	13·56
7	5 36 16·04	25 1 56·7	14·91
8	5 38 34·89	25 0 27·2	16·27
9	5 40 53·82	24 58 49·6	17·63
10	5 43 12·83	24 57 3·8	18·99
11	5 45 31·92	24 55 9·8	20·36
12	5 47 51·09	24 53 7·7	21·73
13	5 50 10·33	24 50 57·3	23·09
14	5 52 29·62	24 48 38·8	24·46
15	5 54 48·98	24 46 12·0	25·83
16	5 57 8·40	24 43 37·0	27·20
17	5 59 27·87	24 40 53·8	28·57
18	6 1 47·38	24 38 2·3	29·94
19	6 4 6·93	24 35 2·7	31·31
20	6 6 26·52	24 31 54·8	32·69
21	6 8 46·15	24 28 38·7	34·06
22	6 11 5·81	24 25 14·3	35·43
23	6 13 25·49	24 21 41·7	36·80
24	6 15 45·19	N.24 18 0·9	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 3.		
	h m s	° ′ ″	″
0	6 15 45·19	N.24 18 0·9	38·17
1	6 18 4·91	24 14 11·9	39·54
2	6 20 24·64	24 10 14·6	40·91
3	6 22 44·38	24 6 9·1	42·28
4	6 25 4·12	24 1 55·5	43·64
5	6 27 23·86	23 57 33·6	45·01
6	6 29 43·60	23 53 3·5	46·37
7	6 32 3·33	23 48 25·3	47·73
8	6 34 23·04	23 43 38·9	49·09
9	6 36 42·74	23 38 44·3	50·45
10	6 39 2·41	23 33 41·6	51·81
11	6 41 22·06	23 28 30·7	53·16
12	6 43 41·69	23 23 11·8	54·51
13	6 46 1·28	23 17 44·7	55·86
14	6 48 20·83	23 12 9·6	57·20
15	6 50 40·34	23 6 26·4	58·54
16	6 52 59·81	23 0 35·2	59·87
17	6 55 19·23	22 54 35·9	61·21
18	6 57 38·60	22 48 28·7	62·54
19	6 59 57·91	22 42 13·5	63·86
20	7 2 17·16	22 35 50·3	65·18
21	7 4 36·35	22 29 19·2	66·50
22	7 6 55·47	22 22 40·2	67·81
23	7 9 14·53	N.22 15 53·4	69·11
	SUNDAY 4.		
0	7 11 33·52	N.22 8 58·7	70·41
1	7 13 52·43	22 1 56·2	71·71
2	7 16 11·26	21 54 46·0	73·00
3	7 18 30·01	21 47 28·0	74·28
4	7 20 48·67	21 40 2·3	75·56
5	7 23 7·25	21 32 29·0	76·83
6	7 25 25·74	21 24 48·0	78·10
7	7 27 44·13	21 16 59·4	79·36
8	7 30 2·43	21 9 3·2	80·62
9	7 32 20·63	21 0 59·5	81·86
10	7 34 38·74	20 52 48·3	83·11
11	7 36 56·74	20 44 29·7	84·34
12	7 39 14·63	20 36 3·6	85·57
13	7 41 32·41	20 27 30·2	86·79
14	7 43 50·09	20 18 49·5	88·00
15	7 46 7·65	20 10 1·5	89·21
16	7 48 25·10	20 1 6·2	90·40
17	7 50 42·43	19 52 3·8	91·59
18	7 52 59·65	19 42 54·2	92·77
19	7 55 16·75	19 33 37·6	93·95
20	7 57 33·73	19 24 13·9	95·11
21	7 59 50·58	19 14 43·2	96·27
22	8 2 7·31	19 5 5·6	97·42
23	8 4 23·92	18 55 21·1	98·55
24	8 6 40·40	N.18 45 29·7	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 5.		
	h m s	° ′ ″	″
0	8 6 40·40	N. 18 45 29·7	99·68
1	8 8 56·75	18 35 31·6	100·81
2	8 11 12·98	18 25 26·8	101·92
3	8 13 29·08	18 15 15·3	103·02
4	8 15 45·05	18 4 57·2	104·11
5	8 18 0·89	17 54 32·5	105·19
6	8 20 16·59	17 44 1·3	106·26
7	8 22 32·17	17 33 23·7	107·33
8	8 24 47·61	17 22 39·8	108·38
9	8 27 2·92	17 11 49·5	109·42
10	8 29 18·10	17 0 52·9	110·46
11	8 31 33·14	16 49 50·2	111·48
12	8 33 48·04	16 38 41·4	112·49
13	8 36 2·81	16 27 26·5	113·49
14	8 38 17·45	16 16 5·5	114·48
15	8 40 31·96	16 4 38·6	115·46
16	8 42 46·33	15 53 5·8	116·43
17	8 45 0·57	15 41 27·2	117·39
18	8 47 14·67	15 29 42·9	118·33
19	8 49 28·65	15 17 52·9	119·27
20	8 51 42·49	15 5 57·3	120·19
21	8 53 56·20	14 53 56·1	121·10
22	8 56 9·78	14 41 49·5	122·00
23	8 58 23·23	N. 14 29 37·5	122·89
	TUESDAY 6.		
0	9 0 36·54	N. 14 17 20·2	123·76
1	9 2 49·73	14 4 57·6	124·63
2	9 5 2·79	13 52 29·9	125·48
3	9 7 15·73	13 39 57·0	126·32
4	9 9 28·54	13 27 19·0	127·15
5	9 11 41·23	13 14 36·1	127·96
6	9 13 53·80	13 1 48·3	128·77
7	9 16 6·24	12 48 55·7	129·56
8	9 18 18·57	12 35 58·4	130·33
9	9 20 30·77	12 22 56·4	131·10
10	9 22 42·86	12 9 49·8	131·86
11	9 24 54·83	11 56 38·7	132·60
12	9 27 6·69	11 43 23·1	133·32
13	9 29 18·44	11 30 3·2	134·04
14	9 31 30·08	11 16 39·0	134·74
15	9 33 41·62	11 3 10·5	135·43
16	9 35 53·05	10 49 37·9	136·10
17	9 38 4·37	10 36 1·3	136·76
18	9 40 15·60	10 22 20·7	137·41
19	9 42 26·72	10 8 36·2	138·05
20	9 44 37·75	9 54 47·9	138·67
21	9 46 48·68	9 40 55·9	139·27
22	9 48 59·52	9 27 0·3	139·87
23	9 51 10·27	9 13 1·1	140·45
24	9 53 20·93	N. 8 58 58·4	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 7.		
	h m s	° ′ ″	″
0	9 53 20·93	N. 8 58 58·4	141·01
1	9 55 31·51	8 44 52·3	141·57
2	9 57 42·00	8 30 42·9	142·11
3	9 59 52·42	8 16 30·3	142·63
4	10 2 2·76	8 2 14·5	143·14
5	10 4 13·03	7 47 55·6	143·64
6	10 6 23·22	7 33 33·7	144·12
7	10 8 33·35	7 19 8·9	144·59
8	10 10 43·41	7 4 41·4	145·05
9	10 12 53·41	6 50 11·2	145·49
10	10 15 3·35	6 35 38·3	145·91
11	10 17 13·23	6 21 2·8	146·33
12	10 19 23·06	6 6 24·8	146·73
13	10 21 32·84	5 51 44·4	147·11
14	10 23 42·57	5 37 1·7	147·49
15	10 25 52·26	5 22 16·8	147·84
16	10 28 1·91	5 7 29·7	148·18
17	10 30 11·52	4 52 40·6	148·51
18	10 32 21·10	4 37 49·5	148·82
19	10 34 30·65	4 22 56·6	149·12
20	10 36 40·17	4 8 1·9	149·40
21	10 38 49·66	3 53 5·5	149·67
22	10 40 59·14	3 38 7·5	149·92
23	10 43 8·59	N. 3 23 8·0	150·16
	THURSDAY 8.		
0	10 45 18·03	N. 3 8 7·0	150·39
1	10 47 27·46	2 53 4·7	150·60
2	10 49 36·89	2 38 1·1	150·79
3	10 51 46·31	2 22 56·3	150·97
4	10 53 55·74	2 7 50·5	151·13
5	10 56 5·16	1 52 43·7	151·28
6	10 58 14·60	1 37 36·0	151·42
7	11 0 24·04	1 22 27·5	151·54
8	11 2 33·50	1 7 18·3	151·64
9	11 4 42·98	0 52 8·4	151·73
10	11 6 52·49	0 36 58·0	151·81
11	11 9 2·02	0 21 47·1	151·87
12	11 11 11·57	N. 0 6 35·9	151·92
13	11 13 21·17	S. 0 8 35·6	151·95
14	11 15 30·80	0 23 47·3	151·96
15	11 17 40·47	0 38 59·1	151·96
16	11 19 50·19	0 54 10·9	151·95
17	11 21 59·96	1 9 22·6	151·92
18	11 24 9·78	1 24 34·1	151·87
19	11 26 19·65	1 39 45·3	151·81
20	11 28 29·59	1 54 56·2	151·74
21	11 30 39·59	2 10 6·7	151·65
22	11 32 49·66	2 25 16·6	151·54
23	11 34 59·80	2 40 25·8	151·42
24	11 37 10·01	S. 2 55 34·4	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 9.				*SUNDAY* 11.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	11 37 10·01	S. 2 55 34·4	151·29	0	13 24 0·55	S. 14 18 35·1	126·99
1	11 39 20·31	3 10 42·2	151·15	1	13 26 18·76	14 31 17·0	126·12
2	11 41 30·69	3 25 49·1	150·98	2	13 28 37·20	14 43 53·7	125·23
3	11 43 41·15	3 40 55·0	150·80	3	13 30 55·88	14 56 25·1	124·33
4	11 45 51·71	3 55 59·8	150·61	4	13 33 14·80	15 8 51·1	123·41
5	11 48 2·36	4 11 3·4	150·40	5	13 35 33·96	15 21 11·5	122·48
6	11 50 13·11	4 26 5·8	150·17	6	13 37 53·35	15 33 26·4	121·53
7	11 52 23·96	4 41 6·8	149·93	7	13 40 12·99	15 45 35·6	120·57
8	11 54 34·92	4 56 6·4	149·67	8	13 42 32·87	15 57 39·0	119·60
9	11 56 45·98	5 11 4·4	149·40	9	13 44 52·99	16 9 36·6	118·61
10	11 58 57·16	5 26 0·8	149·11	10	13 47 13·36	16 21 28·3	117·61
11	12 1 8·46	5 40 55·5	148·81	11	13 49 33·98	16 33 14·0	116·59
12	12 3 19·88	5 55 48·3	148·49	12	13 51 54·84	16 44 53·5	115·56
13	12 5 31·42	6 10 39·2	148·16	13	13 54 15·95	16 56 26·9	114·52
14	12 7 43·09	6 25 28·2	147·81	14	13 56 37·31	17 7 54·0	113·46
15	12 9 54·90	6 40 15·1	147·45	15	13 58 58·92	17 19 14·8	112·39
16	12 12 6·85	6 54 59·7	147·07	16	14 1 20·78	17 30 29·1	111·30
17	12 14 18·93	7 9 42·1	146·67	17	14 3 42·88	17 41 36·9	110·20
18	12 16 31·15	7 24 22·2	146·26	18	14 6 5·24	17 52 38·1	109·09
19	12 18 43·52	7 38 59·8	145·84	19	14 8 27·85	18 3 32·7	107·96
20	12 20 56·04	7 53 34·8	145·40	20	14 10 50·71	18 14 20·5	106·82
21	12 23 8·72	8 8 7·2	144·95	21	14 13 13·81	18 25 1·4	105·67
22	12 25 21·55	8 22 36·9	144·47	22	14 15 37·17	18 35 35·4	104·50
23	12 27 34·54	S. 8 37 3·8	143·99	23	14 18 0·77	S. 18 46 2·5	103·33
	SATURDAY 10.				*MONDAY* 12.		
0	12 29 47·69	S. 8 51 27·7	143·49	0	14 20 24·63	S. 18 56 22·5	102·14
1	12 32 1·01	9 5 48·7	142·98	1	14 22 48·73	19 6 35·4	100·94
2	12 34 14·50	9 20 6·6	142·45	2	14 25 13·08	19 16 41·0	99·72
3	12 36 28·17	9 34 21·3	141·91	3	14 27 37·68	19 26 39·4	98·49
4	12 38 42·01	9 48 32·7	141·35	4	14 30 2·53	19 36 30·4	97·25
5	12 40 56·03	10 2 40·8	140·77	5	14 32 27·62	19 46 13·9	96·00
6	12 43 10·24	10 16 45·4	140·18	6	14 34 52·95	19 55 49·8	94·73
7	12 45 24·63	10 30 46·5	139·57	7	14 37 18·52	20 5 18·2	93·45
8	12 47 39·21	10 44 43·9	138·95	8	14 39 44·33	20 14 39·0	92·16
9	12 49 53·99	10 58 37·6	138·31	9	14 42 10·38	20 23 52·0	90·86
10	12 52 8·96	11 12 27·5	137·66	10	14 44 36·66	20 32 57·1	89·54
11	12 54 24·13	11 26 13·5	137·00	11	14 47 3·18	20 41 54·3	88·22
12	12 56 39·49	11 39 55·5	136·32	12	14 49 29·93	20 50 43·6	86·88
13	12 58 55·06	11 53 33·4	135·62	13	14 51 56·92	20 59 24·9	85·53
14	13 1 10·84	12 7 7·1	134·91	14	14 54 24·13	21 7 58·1	84·17
15	13 3 26·83	12 20 36·6	134·18	15	14 56 51·57	21 16 23·1	82·80
16	13 5 43·03	12 34 1·7	133·44	16	14 59 19·23	21 24 39·9	81·42
17	13 7 59·45	12 47 22·4	132·69	17	15 1 47·12	21 32 48·4	80·03
18	13 10 16·08	13 0 38·5	131·92	18	15 4 15·22	21 40 48·6	78·63
19	13 12 32·93	13 13 50·0	131·13	19	15 6 43·53	21 48 40·4	77·22
20	13 14 50·01	13 26 56·8	130·33	20	15 9 12·05	21 56 23·7	75·79
21	13 17 7·30	13 39 58·8	129·52	21	15 11 40·78	22 3 58·5	74·36
22	13 19 24·82	13 52 55·9	128·69	22	15 14 9·72	22 11 24·7	72·92
23	13 21 42·57	14 5 48·1	127·84	23	15 16 38·85	22 18 42·2	71·47
24	13 24 0·55	S. 14 18 35·1		24	15 19 8·18	S. 22 25 51·0	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 13.		
	h m s	° ′ ″	″
0	15 19 8·18	S. 22 25 51·0	70·01
1	15 21 37·71	22 32 51·0	68·54
2	15 24 7·42	22 39 42·2	67·06
3	15 26 37·32	22 46 24·6	65·57
4	15 29 7·40	22 52 58·1	64·08
5	15 31 37·66	22 59 22·5	62·57
6	15 34 8·09	23 5 37·9	61·06
7	15 36 38·69	23 11 44·3	59·54
8	15 39 9·45	23 17 41·6	58·02
9	15 41 40·37	23 23 29·7	56·48
10	15 44 11·44	23 29 8·6	54·94
11	15 46 42·66	23 34 38·2	53·39
12	15 49 14·01	23 39 58·5	51·83
13	15 51 45·51	23 45 9·5	50·27
14	15 54 17·14	23 50 11·1	48·70
15	15 56 48·89	23 55 3·3	47·13
16	15 59 20·77	23 59 46·1	45·55
17	16 1 52·76	24 4 19·4	43·97
18	16 4 24·86	24 8 43·2	42·38
19	16 6 57·06	24 12 57·5	40·78
20	16 9 29·36	24 17 2·2	39·18
21	16 12 1·75	24 20 57·3	37·58
22	16 14 34·22	24 24 42·8	35·97
23	16 17 6·77	S. 24 28 18·6	34·36
	WEDNESDAY 14.		
0	16 19 39·40	S. 24 31 44·7	32·75
1	16 22 12·09	24 35 1·2	31·13
2	16 24 44·84	24 38 8·0	29·51
3	16 27 17·65	24 41 5·0	27·88
4	16 29 50·50	24 43 52·3	26·26
5	16 32 23·39	24 46 29·9	24·63
6	16 34 56·31	24 48 57·7	23·00
7	16 37 29·25	24 51 15·7	21·37
8	16 40 2·22	24 53 23·9	19·73
9	16 42 35·19	24 55 22·3	18·10
10	16 45 8·17	24 57 10·9	16·47
11	16 47 41·15	24 58 49·7	14·83
12	16 50 14·12	25 0 18·7	13·19
13	16 52 47·08	25 1 37·9	11·56
14	16 55 20·01	25 2 47·2	9·92
15	16 57 52·91	25 3 46·7	8·29
16	17 0 25·78	25 4 36·5	6·65
17	17 2 58·60	25 5 16·4	5·02
18	17 5 31·36	25 5 46·5	3·39
19	17 8 4·07	25 6 6·9	1·76
20	17 10 36·72	25 6 17·5	0·14
21	17 13 9·29	25 6 18·3	1·48
22	17 15 41·78	25 6 9·4	3·10
23	17 18 14·19	25 5 50·8	4·72
24	17 20 46·51	S. 25 5 22·5	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 15.		
	h m s	° ′ ″	″
0	17 20 46·51	S. 25 5 22·5	6·34
1	17 23 18·72	25 4 44·5	7·95
2	17 25 50·83	25 3 56·8	9·56
3	17 28 22·82	25 2 59·4	11·16
4	17 30 54·69	25 1 52·5	12·76
5	17 33 26·43	25 0 35·9	14·35
6	17 35 58·04	24 59 9·8	15·94
7	17 38 29·51	24 57 34·2	17·52
8	17 41 0·83	24 55 49·1	19·10
9	17 43 31·99	24 53 54·5	20·67
10	17 46 2·99	24 51 50·4	22·24
11	17 48 33·83	24 49 36·9	23·80
12	17 51 4·50	24 47 14·1	25·36
13	17 53 34·98	24 44 42·0	26·90
14	17 56 5·28	24 42 0·6	28·44
15	17 58 35·39	24 39 9·9	29·98
16	18 1 5·30	24 36 10·0	31·50
17	18 3 35·00	24 33 1·0	33·02
18	18 6 4·49	24 29 42·9	34·53
19	18 8 33·77	24 26 15·7	36·03
20	18 11 2·83	24 22 39·5	37·53
21	18 13 31·66	24 18 54·3	39·01
22	18 16 0·26	24 15 0·2	40·49
23	18 18 28·63	S. 24 10 57·3	41·95
	FRIDAY 16.		
0	18 20 56·75	S. 24 6 45·6	43·41
1	18 23 24·62	24 2 25·1	44·86
2	18 25 52·24	23 57 55·9	46·31
3	18 28 19·61	23 53 18·1	47·74
4	18 30 46·71	23 48 31·7	49·16
5	18 33 13·54	23 43 36·7	50·57
6	18 35 40·11	23 38 33·3	51·97
7	18 38 6·40	23 33 21·5	53·36
8	18 40 32·41	23 28 1·3	54·74
9	18 42 58·14	23 22 32·9	56·11
10	18 45 23·58	23 16 56·3	57·47
11	18 47 48·73	23 11 11·5	58·82
12	18 50 13·59	23 5 18·6	60·15
13	18 52 38·15	22 59 17·7	61·48
14	18 55 2·40	22 53 8·8	62·79
15	18 57 26·35	22 46 52·0	64·10
16	18 59 49·99	22 40 27·5	65·38
17	19 2 13·32	22 33 55·2	66·66
18	19 4 36·34	22 27 15·2	67·93
19	19 6 59·04	22 20 27·6	69·18
20	19 9 21·42	22 13 32·5	70·42
21	19 11 43·48	22 6 29·9	71·66
22	19 14 5·22	21 59 20·0	72·87
23	19 16 26·63	21 52 2·8	74·08
24	19 18 47·71	S. 21 44 38·3	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 17.				*MONDAY* 19.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	19 18 47·71	S. 21 44 38·3	75·27	0	21 5 0·43	S. 13 52 35·4	117·27
1	19 21 8·46	21 37 6·7	76·45	1	21 7 5·16	13 40 51·8	117·83
2	19 23 28·87	21 29 28·0	77·62	2	21 9 9·59	13 29 4·8	118·38
3	19 25 48·95	21 21 42·3	78·78	3	21 11 13·72	13 17 14·5	118·91
4	19 28 8·70	21 13 49·6	79·92	4	21 13 17·56	13 5 21·0	119·44
5	19 30 28·10	21 5 50·1	81·05	5	21 15 21·11	12 53 24·4	119·95
6	19 32 47·17	20 57 43·8	82·16	6	21 17 24·38	12 41 24·7	120·44
7	19 35 5·90	20 49 30·8	83·27	7	21 19 27·35	12 29 22·0	120·93
8	19 37 24·28	20 41 11·2	84·36	8	21 21 30·04	12 17 16·5	121·40
9	19 39 42·33	20 32 45·0	85·43	9	21 23 32·46	12 5 8·1	121·86
10	19 42 0·03	20 24 12·4	86·50	10	21 25 34·60	11 52 56·9	122·31
11	19 44 17·38	20 15 33·4	87·55	11	21 27 36·46	11 40 43·0	122·75
12	19 46 34·40	20 6 48·1	88·60	12	21 29 38·05	11 28 26·5	123·18
13	19 48 51·07	19 57 56·5	89·63	13	21 31 39·38	11 16 7·4	123·60
14	19 51 7·39	19 48 58·7	90·65	14	21 33 40·44	11 3 45·8	124·00
15	19 53 23·36	19 39 54·8	91·65	15	21 35 41·24	10 51 21·8	124·39
16	19 55 38·99	19 30 44·9	92·63	16	21 37 41·78	10 38 55·5	124·77
17	19 57 54·27	19 21 29·1	93·61	17	21 39 42·06	10 26 26·8	125·14
18	20 0 9·21	19 12 7·5	94·57	18	21 41 42·10	10 13 56·0	125·50
19	20 2 23·80	19 2 40·1	95·51	19	21 43 41·88	10 1 23·0	125·85
20	20 4 38·04	18 53 7·0	96·44	20	21 45 41·42	9 48 47·9	126·18
21	20 6 51·94	18 43 28·4	97·36	21	21 47 40·72	9 36 10·8	126·51
22	20 9 5·50	18 33 44·2	98·27	22	21 49 39·78	9 23 31·8	126·82
23	20 11 18·71	S. 18 23 54·5	99·16	23	21 51 38·60	S. 9 10 50·9	127·12
	SUNDAY 18.				*TUESDAY* 20.		
0	20 13 31·57	S. 18 13 59·5	100·05	0	21 53 37·19	S. 8 58 8·1	127·41
1	20 15 44·09	18 3 59·2	100·92	1	21 55 35·55	8 45 23·6	127·70
2	20 17 56·27	17 53 53·7	101·77	2	21 57 33·69	8 32 37·4	127·96
3	20 20 8·11	17 43 43·1	102·61	3	21 59 31·60	8 19 49·6	128·22
4	20 22 19·61	17 33 27·4	103·44	4	22 1 29·29	8 7 0·3	128·47
5	20 24 30·77	17 23 6·8	104·25	5	22 3 26·77	7 54 9·5	128·71
6	20 26 41·59	17 12 41·3	105·05	6	22 5 24·04	7 41 17·2	128·94
7	20 28 52·08	17 2 11·0	105·84	7	22 7 21·10	7 28 23·5	129·16
8	20 31 2·23	16 51 35·9	106·61	8	22 9 17·95	7 15 28·6	129·37
9	20 33 12·04	16 40 56·2	107·37	9	22 11 14·60	7 2 32·4	129·56
10	20 35 21·52	16 30 12·0	108·12	10	22 13 11·05	6 49 35·0	129·75
11	20 37 30·68	16 19 23·3	108·86	11	22 15 7·30	6 36 36·5	129·93
12	20 39 39·50	16 8 30·1	109·59	12	22 17 3·37	6 23 36·9	130·10
13	20 41 48·00	15 57 32·6	110·30	13	22 18 59·25	6 10 36·3	130·26
14	20 43 56·17	15 46 30·8	110·99	14	22 20 54·94	5 57 34·8	130·40
15	20 46 4·02	15 35 24·8	111·68	15	22 22 50·46	5 44 32·4	130·54
16	20 48 11·54	15 24 14·7	112·35	16	22 24 45·79	5 31 29·2	130·67
17	20 50 18·75	15 13 0·6	113·01	17	22 26 40·95	5 18 25·2	130·78
18	20 52 25·64	15 1 42·5	113·66	18	22 28 35·95	5 5 20·5	130·89
19	20 54 32·22	14 50 20·6	114·29	19	22 30 30·78	4 52 15·1	130·99
20	20 56 38·48	14 38 54·9	114·91	20	22 32 25·44	4 39 9·2	131·08
21	20 58 44·43	14 27 25·4	115·52	21	22 34 19·94	4 26 2·7	131·16
22	21 0 50·07	14 15 52·3	116·11	22	22 36 14·29	4 12 55·7	131·23
23	21 2 55·40	14 4 15·6	116·70	23	22 38 8·49	3 59 48·3	131·29
24	21 5 0·43	S. 13 52 35·4		24	22 40 2·53	S. 3 46 40·6	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec for 10m.
	WEDNESDAY 21.				*FRIDAY 23.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	22 40 2·53	S. 3 46 40·6	131·34	0	0 9 33·02	N. 6 33 44·7	123·96
1	22 41 56·43	3 33 32·6	131·38	1	0 11 24·19	6 46 8·4	123·62
2	22 43 50·20	3 20 24·3	131·41	2	0 13 15·38	6 58 30·1	123·27
3	22 45 43·83	3 7 15·8	131·44	3	0 15 6·60	7 10 49·7	122·91
4	22 47 37·32	2 54 7·2	131·45	4	0 16 57·86	7 23 7·2	122·55
5	22 49 30·68	2 40 58·5	131·46	5	0 18 49·16	7 35 22·5	122·18
6	22 51 23·92	2 27 49·7	131·45	6	0 20 40·50	7 47 35·6	121·81
7	22 53 17·03	2 14 41·0	131·44	7	0 22 31·88	7 59 46·5	121·42
8	22 55 10·02	2 1 32·3	131·42	8	0 24 23·32	8 11 55·0	121·03
9	22 57 2·90	1 48 23·8	131·39	9	0 26 14·80	8 24 1·2	120·64
10	22 58 55·66	1 35 15·4	131·35	10	0 28 6·33	8 36 5·0	120·23
11	23 0 48·32	1 22 7·3	131·31	11	0 29 57·93	8 48 6·4	119·82
12	23 2 40·87	1 8 59·4	131·25	12	0 31 49·58	9 0 5·4	119·41
13	23 4 33·32	0 55 51·9	131·19	13	0 33 41·29	9 12 1·8	118·98
14	23 6 25·67	0 42 44·8	131·12	14	0 35 33·07	9 23 55·7	118·55
15	23 8 17·93	0 29 38·1	131·04	15	0 37 24·93	9 35 47·0	118·11
16	23 10 10·10	0 16 31·8	130·95	16	0 39 16·85	9 47 35·7	117·67
17	23 12 2·18	S. 0 3 26·1	130·85	17	0 41 8·85	9 59 21·8	117·22
18	23 13 54·18	N. 0 9 39·0	130·74	18	0 43 0·93	10 11 5·1	116·76
19	23 15 46·10	0 22 43·4	130·63	19	0 44 53·09	10 22 45·6	116·30
20	23 17 37·95	0 35 47·2	130·51	20	0 46 45·33	10 34 23·4	115·82
21	23 19 29·72	0 48 50·3	130·38	21	0 48 37·67	10 45 58·4	115·34
22	23 21 21·42	1 1 52·6	130·24	22	0 50 30·09	10 57 30·5	114·86
23	23 23 13·06	N. 1 14 54·0	130·09	23	0 52 22·61	N.11 8 59·7	114·37
	THURSDAY 22.				*SATURDAY 24.*		
0	23 25 4·63	N. 1 27 54·6	129·94	0	0 54 15·23	N.11 20 25·8	113·87
1	23 26 56·15	1 40 54·2	129·78	1	0 56 7·95	11 31 49·0	113·36
2	23 28 47·61	1 53 52·9	129·61	2	0 58 0·77	11 43 9·2	112·85
3	23 30 39·02	2 6 50·6	129·43	3	0 59 53·69	11 54 26·3	112·33
4	23 32 30·39	2 19 47·2	129·24	4	1 1 46·72	12 5 40·3	111·81
5	23 34 21·71	2 32 42·6	129·05	5	1 3 39·87	12 16 51·2	111·28
6	23 36 12·99	2 45 36·9	128·85	6	1 5 33·13	12 27 58·9	110·74
7	23 38 4·23	2 58 30·0	128·64	7	1 7 26·50	12 39 3·3	110·20
8	23 39 55·44	3 11 21·9	128·43	8	1 9 19·99	12 50 4·5	109·65
9	23 41 46·62	3 24 12·5	128·20	9	1 11 13·61	13 1 2·4	109·09
10	23 43 37·77	3 37 1·7	127·97	10	1 13 7·36	13 11 56·9	108·52
11	23 45 28·89	3 49 49·5	127·73	11	1 15 1·23	13 22 48·0	107·95
12	23 47 20·00	4 2 35·9	127·49	12	1 16 55·22	13 33 35·7	107·37
13	23 49 11·09	4 15 20·8	127·23	13	1 18 49·35	13 44 19·9	106·79
14	23 51 2·17	4 28 4·2	126·97	14	1 20 43·62	13 55 0·7	106·20
15	23 52 53·24	4 40 46·0	126·70	15	1 22 38·03	14 5 37·9	105·60
16	23 54 44·31	4 53 26·2	126·43	16	1 24 32·58	14 16 11·5	104·99
17	23 56 35·37	5 6 4·8	126·14	17	1 26 27·27	14 26 41·4	104·38
18	23 58 26·43	5 18 41·7	125·85	18	1 28 22·11	14 37 7·7	103·76
19	0 0 17·50	5 31 16·8	125·55	19	1 30 17·10	14 47 30·3	103·14
20	0 2 8·57	5 43 50·1	125·25	20	1 32 12·24	14 57 49·2	102·51
21	0 3 59·66	5 56 21·6	124·94	21	1 34 7·53	15 8 4·2	101·87
22	0 5 50·76	6 8 51·3	124·62	22	1 36 2·97	15 18 15·4	101·22
23	0 7 41·88	6 21 19·0	124·29	23	1 37 58·57	15 28 22·7	100·57
24	0 9 33·02	N. 6 33 44·7		24	1 39 54·33	N.15 38 26·1	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SUNDAY 25.		
	h m s	° ′ ″	″
0	1 39 54·33	N.15 38 26·1	99·91
1	1 41 50·26	15 48 25·5	99·24
2	1 43 46·35	15 58 21·0	98·57
3	1 45 42·60	16 8 12·4	97·89
4	1 47 39·03	16 17 59·8	97·20
5	1 49 35·63	16 27 43·0	96·51
6	1 51 32·40	16 37 22·1	95·81
7	1 53 29·34	16 46 57·0	95·11
8	1 55 26·47	16 56 27·7	94·40
9	1 57 23·77	17 5 54·1	93·68
10	1 59 21·25	17 15 16·2	92·96
11	2 1 18·92	17 24 33·9	92·22
12	2 3 16·77	17 33 47·2	91·48
13	2 5 14·81	17 42 56·1	90·74
14	2 7 13·03	17 52 0·6	89·99
15	2 9 11·45	18 1 0·5	89·23
16	2 11 10·06	18 9 55·9	88·46
17	2 13 8·86	18 18 46·7	87·69
18	2 15 7·86	18 27 32·8	86·91
19	2 17 7·06	18 36 14·3	86·12
20	2 19 6·45	18 44 51·0	85·33
21	2 21 6·05	18 53 23·0	84·53
22	2 23 5·85	19 1 50·2	83·72
23	2 25 5·85	N.19 10 12·6	82·91
	MONDAY 26.		
0	2 27 6·05	N.19 18 30·0	82·09
1	2 29 6·46	19 26 42·6	81·26
2	2 31 7·08	19 34 50·2	80·43
3	2 33 7·90	19 42 52·7	79·59
4	2 35 8·94	19 50 50·3	78·74
5	2 37 10·18	19 58 42·7	77·89
6	2 39 11·63	20 6 30·0	77·02
7	2 41 13·30	20 14 12·2	76·15
8	2 43 15·18	20 21 49·1	75·28
9	2 45 17·27	20 29 20·8	74·40
10	2 47 19·58	20 36 47·1	73·51
11	2 49 22·10	20 44 8·1	72·61
12	2 51 24·84	20 51 23·8	71·71
13	2 53 27·80	20 58 34·1	70·80
14	2 55 30·97	21 5 38·9	69·88
15	2 57 34·36	21 12 38·2	68·96
16	2 59 37·98	21 19 32·0	68·03
17	3 1 41·81	21 26 20·2	67·10
18	3 3 45·86	21 33 2·7	66·16
19	3 5 50·12	21 39 39·7	65·21
20	3 7 54·60	21 46 10·9	64·25
21	3 9 59·31	21 52 36·4	63·29
22	3 12 4·24	21 58 56·1	62·32
23	3 14 9·39	22 5 10·0	61·34
24	3 16 14·75	N.22 11 18·1	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 27.		
	h m s	° ′ ″	″
0	3 16 14·75	N.22 11 18·1	60·36
1	3 18 20·33	22 17 20·3	59·37
2	3 20 26·14	22 23 26·5	58·37
3	3 22 32·17	22 29 6·7	57·37
4	3 24 38·41	22 34 50·9	56·36
5	3 26 44·87	22 40 29·1	55·35
6	3 28 51·55	22 46 1·2	54·32
7	3 30 58·45	22 51 27·2	53·29
8	3 33 5·57	22 56 46·9	52·26
9	3 35 12·90	23 2 0·5	51·22
10	3 37 20·45	23 7 7·8	50·17
11	3 39 28·21	23 12 8·8	49·11
12	3 41 36·19	23 17 3·4	48·05
13	3 43 44·38	23 21 51·7	46·98
14	3 45 52·79	23 26 33·6	45·91
15	3 48 1·41	23 31 9·0	44·83
16	3 50 10·24	23 35 38·0	43·74
17	3 52 19·27	23 40 0·4	42·65
18	3 54 28·52	23 44 16·3	41·55
19	3 56 37·97	23 48 25·5	40·44
20	3 58 47·63	23 52 28·2	39·33
21	4 0 57·50	23 56 24·2	38·21
22	4 3 7·57	24 0 13·5	37·09
23	4 5 17·83	N.24 3 56·0	35·96
	WEDNESDAY 28.		
0	4 7 28·30	N.24 7 31·7	34·83
1	4 9 38·97	24 11 0·7	33·69
2	4 11 49·84	24 14 22·8	32·54
3	4 14 0·90	24 17 38·0	31·39
4	4 16 12·15	24 20 46·3	30·23
5	4 18 23·59	24 23 47·7	29·06
6	4 20 35·23	24 26 42·1	27·89
7	4 22 47·05	24 29 29·5	26·72
8	4 24 59·05	24 32 9·8	25·54
9	4 27 11·24	24 34 43·0	24·35
10	4 29 23·61	24 37 9·1	23·16
11	4 31 36·15	24 39 28·1	21·97
12	4 33 48·87	24 41 39·9	20·77
13	4 36 1·76	24 43 44·5	19·56
14	4 38 14·83	24 45 41·9	18·35
15	4 40 28·06	24 47 31·9	17·13
16	4 42 41·46	24 49 14·7	15·91
17	4 44 55·03	24 50 50·2	14·68
18	4 47 8·75	24 52 18·3	13·45
19	4 49 22·63	24 53 39·0	12·22
20	4 51 36·67	24 54 52·4	10·98
21	4 53 50·86	24 55 58·3	9·74
22	4 56 5·20	24 56 56·7	8·49
23	4 58 19·69	24 57 47·6	7·24
24	5 0 34·33	N.24 58 31·1	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 29.		
	h m s	° ′ ″	″
0	5 0 34·33	N.24 58 31·1	5·98
1	5 2 49·11	24 59 7·0	4·72
2	5 5 4·02	24 59 35·3	3·46
3	5 7 19·06	24 59 56·1	2·19
4	5 9 34·24	25 0 9·2	0·92
5	5 11 49·55	25 0 14·7	0·36
6	5 14 4·99	25 0 12·6	1·64
7	5 16 20·55	25 0 2·8	2·92
8	5 18 36·22	24 59 45·3	4·20
9	5 20 52·01	24 59 20·1	5·49
10	5 23 7·92	24 58 47·1	6·78
11	5 25 23·93	24 58 6·4	8·08
12	5 27 40·05	24 57 17·9	9·38
13	5 29 56·27	24 56 21·7	10·68
14	5 32 12·59	24 55 17·6	11·98
15	5 34 29·01	24 54 5·7	13·28
16	5 36 45·52	24 52 46·0	14·59
17	5 39 2·12	24 51 18·5	15·90
18	5 41 18·81	24 49 43·1	17·21
19	5 43 35·57	24 47 59·8	18·52
20	5 45 52·42	24 46 8·6	19·84
21	5 48 9·34	24 44 9·6	21·15
22	5 50 26·33	24 42 2·7	22·47
23	5 52 43·39	N.24 39 47·9	23·79
	FRIDAY 30.		
0	5 55 0·51	N.24 37 25·1	25·11
1	5 57 17·70	24 34 54·4	26·43
2	5 59 34·94	24 32 15·8	27·76
3	6 1 52·24	24 29 29·3	29·08
4	6 4 9·59	24 26 34·8	30·41
5	6 6 26·98	24 23 32·3	31·73
6	6 8 44·42	24 20 21·9	33·06
7	6 11 1·90	24 17 3·6	34·39
8	6 13 19·42	24 13 37·2	35·71
9	6 15 36·97	24 10 2·9	37·04
10	6 17 54·55	24 6 20·7	38·36
11	6 20 12·16	24 2 30·5	39·69
12	6 22 29·79	23 58 32·4	41·01
13	6 24 47·44	23 54 26·3	42·34
14	6 27 5·11	23 50 12·3	43·66
15	6 29 22·79	23 45 50·3	44·98
16	6 31 40·48	23 41 20·4	46·31
17	6 33 58·18	23 36 42·6	47·63
18	6 36 15·88	23 31 56·8	48·94
19	6 38 33·58	23 27 3·1	50·26
20	6 40 51·28	23 22 1·5	51·58
21	6 43 8·98	23 16 52·1	52·90
22	6 45 26·66	23 11 34·7	54·21
23	6 47 44·33	23 6 9·4	55·52
24	6 50 1·99	N.23 0 36·3	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 31.		
	h m s	° ′ ″	″
0	6 50 1·99	N.23 0 36·3	56·82
1	6 52 19·63	22 54 55·4	58·13
2	6 54 37·25	22 49 6·6	59·43
3	6 56 54·84	22 43 10·0	60·73
4	6 59 12·41	22 37 5·6	62·03
5	7 1 29·95	22 30 53·4	63·32
6	7 3 47·46	22 24 33·5	64·61
7	7 6 4·94	22 18 5·8	65·90
8	7 8 22·38	22 11 30·4	67·19
9	7 10 39·78	22 4 47·3	68·47
10	7 12 57·14	21 57 56·5	69·75
11	7 15 14·46	21 50 58·0	71·02
12	7 17 31·73	21 43 51·9	72·29
13	7 19 48·95	21 36 38·2	73·56
14	7 22 6·12	21 29 16·8	74·82
15	7 24 23·24	21 21 47·9	76·07
16	7 26 40·30	21 14 11·5	77·32
17	7 28 57·30	21 6 27·5	78·57
18	7 31 14·24	20 58 36·1	79·81
19	7 33 31·13	20 50 37·3	81·05
20	7 35 47·95	20 42 31·0	82·27
21	7 38 4·70	20 34 17·3	83·50
22	7 40 21·39	20 25 56·3	84·72
23	7 42 38·01	N.20 17 28·0	85·93
	SUNDAY, SEPT. 1.		
0	7 44 54·57	N.20 8 52·4	

PHASES OF THE MOON.

	d h m
● New Moon - -	6 0 53·7
☽ *First Quarter* - -	12 19 15·3
○ Full Moon - - -	19 23 50·9
☾ *Last Quarter* - -	28 1 23·1

	d h
☾ Perigee - - - - - -	10 3
☾ Apogee - - - - - -	25 16

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Fomalhaut W.	97 20 47	3361	98 43 48	3353	100 6 58	3345	101 30 17	3339
	α Pegasi W.	76 49 34	3073	78 18 17	3060	79 47 16	3047	81 16 30	3034
	α Arietis W.	33 24 49	2980	34 55 27	2965	36 26 24	2949	37 57 41	2935
	Sun E.	60 32 19	3282	59 7 47	3270	57 43 1	3258	56 18 0	3246
2	Fomalhaut W.	108 28 37	3312	109 52 35	3308	111 16 37	3305	112 40 43	3304
	α Pegasi W.	88 46 46	2968	90 17 39	2954	91 48 49	2942	93 20 15	2929
	α Arietis W.	45 38 46	2859	47 11 57	2845	48 45 26	2830	50 19 15	2815
	Sun E.	49 9 10	3179	47 42 36	3165	46 15 45	3151	44 48 37	3137
3	α Pegasi W.	101 1 35	2863	102 34 41	2851	104 8 3	2839	105 41 40	2827
	α Arietis W.	58 13 15	2740	59 49 2	2724	61 25 10	2709	63 1 38	2694
	Aldebaran W.	26 28 30	2954	27 59 40	2916	29 31 38	2882	31 4 20	2850
	Sun E.	37 28 36	3064	35 59 43	3049	34 30 31	3035	33 1 2	3021
8	Sun W.	26 4 43	2585	27 43 58	2578	29 23 23	2572	31 2 57	2566
	Spica E.	40 20 5	2276	38 33 30	2272	36 46 50	2270	35 0 6	2267
	Antares E.	85 55 50	2262	84 8 54	2257	82 21 51	2253	80 34 42	2249
9	Sun W.	39 22 34	2545	41 2 44	2543	42 42 58	2540	44 23 15	2539
	Saturn W.	17 40 40	2523	19 21 21	2479	21 3 4	2446	22 45 33	2421
	Venus W.	16 10 2	2893	17 42 30	2846	19 15 58	2811	20 50 12	2783
	Spica E.	26 5 56	2268	24 19 9	2272	22 32 28	2277	20 45 54	2284
	Antares E.	71 37 40	2235	69 50 5	2233	68 2 27	2232	66 14 47	2231
	α Aquilæ E.	121 47 55	2990	120 17 30	2961	118 46 28	2935	117 14 54	2912
10	Sun W.	52 45 0	2537	54 25 22	2538	56 5 42	2539	57 46 1	2541
	Saturn W.	31 24 59	2351	33 9 44	2345	34 54 38	2340	36 39 40	2335
	Venus W.	28 48 25	2708	30 24 54	2700	32 1 34	2695	33 38 21	2690
	Antares E.	57 16 16	2232	55 28 36	2233	53 40 57	2234	51 53 20	2235
	α Aquilæ E.	109 30 32	2827	107 56 40	2816	106 22 33	2807	104 48 15	2799
11	Sun W.	66 6 56	2553	67 46 56	2556	69 26 52	2559	71 6 44	2563
	Saturn W.	45 25 53	2328	47 11 12	2328	48 56 30	2329	50 41 47	2331
	Venus W.	41 43 20	2682	43 20 24	2683	44 57 27	2683	46 34 30	2685
	Antares E.	42 56 0	2248	41 8 44	2251	39 21 33	2255	37 34 27	2258
	α Aquilæ E.	96 54 40	2780	95 19 46	2780	93 44 51	2781	92 9 58	2782
	Fomalhaut E.	121 58 37	2852	120 25 16	2832	118 51 30	2816	117 17 23	2802
12	Sun W.	79 24 41	2583	81 3 59	2588	82 43 10	2593	84 22 14	2599
	Saturn W.	59 27 29	2343	61 12 26	2346	62 57 18	2350	64 42 4	2355
	Venus W.	54 38 59	2698	56 15 41	2702	57 52 19	2706	59 28 51	2710
	Spica W.	17 19 22	2339	19 4 25	2333	20 49 37	2329	22 34 54	2328
	Antares E.	28 40 27	2281	26 54 0	2287	25 7 41	2292	23 21 30	2298
	α Aquilæ E.	84 16 41	2810	82 42 26	2818	81 8 22	2828	79 34 30	2839
	Fomalhaut E.	109 22 50	2754	107 47 22	2750	106 11 48	2746	104 36 9	2743
13	Sun W.	92 35 46	2626	94 14 6	2632	95 52 18	2638	97 30 21	2644
	Venus W.	67 30 1	2734	69 5 56	2740	70 41 43	2745	72 17 23	2751
	Spica W.	31 21 21	2335	33 6 29	2338	34 51 33	2342	36 36 31	2346
	α Aquilæ E.	71 49 17	2912	70 17 14	2931	68 45 35	2952	67 14 22	2974
	Fomalhaut E.	96 37 26	2744	95 1 45	2748	93 26 9	2751	91 50 37	2756
	α Pegasi E.	117 58 59	2493	116 17 36	2494	114 36 14	2494	112 54 53	2495

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month	Star's Name and Position.	*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Fomalhaut W.	102 53 43	3333	104 17 16	3326	105 40 57	3321	107 4 44	3316
	α Pegasi W.	82 46 1	3021	84 15 48	3008	85 45 51	2995	87 16 10	2981
	α Arietis W.	39 29 16	2920	41 1 10	2905	42 33 23	2890	44 5 55	2875
	Sun E.	54 52 45	3233	53 27 15	3220	52 1 29	3207	50 35 28	3193
2	Fomalhaut W.	114 4 50	3302	115 28 59	3302	116 53 8	3304	118 17 15	3307
	α Pegasi W.	94 51 57	2915	96 23 57	2902	97 56 13	2889	99 28 46	2876
	α Arietis W.	51 53 24	2800	53 27 52	2785	55 2 39	2769	56 37 47	2754
	Sun E.	43 21 13	3122	41 53 30	3108	40 25 30	3093	38 57 12	3078
3	α Pegasi W.	107 15 33	2815	108 49 42	2803	110 24 6	2792	111 58 44	2782
	α Arietis W.	64 38 26	2678	66 15 35	2664	67 53 3	2649	69 30 52	2634
	Aldebaran W.	32 37 44	2820	34 11 46	2792	35 46 24	2766	37 21 36	2741
	Sun E.	31 31 15	3006	30 1 10	2993	28 30 48	2978	27 0 8	2965
8	Sun W.	32 42 39	2560	34 22 29	2556	36 2 25	2551	37 42 27	2548
	Spica E.	33 13 18	2266	31 26 28	2265	29 39 37	2265	27 52 46	2266
	Antares E.	78 47 27	2245	77 0 7	2242	75 12 42	2239	73 25 13	2237
9	Sun W.	46 3 34	2538	47 43 55	2538	49 24 16	2537	51 4 38	2537
	Saturn W.	24 28 38	2400	26 12 13	2384	27 56 11	2371	29 40 27	2360
	Venus W.	22 25 2	2760	24 0 22	2743	25 36 5	2729	27 12 7	2717
	Spica E.	18 59 31	2295	17 13 24	2309	15 27 38	2329	13 42 21	2359
	Antares E.	64 27 5	2231	62 39 23	2231	60 51 41	2230	59 3 58	2231
	α Aquilæ E.	115 42 50	2891	114 10 19	2872	112 37 24	2855	111 4 8	2840
10	Sun W.	59 26 17	2542	61 6 32	2545	62 46 43	2547	64 26 51	2549
	Saturn W.	38 24 48	2333	40 10 0	2330	41 55 16	2328	43 40 34	2328
	Venus W.	35 15 14	2686	36 52 12	2684	38 29 13	2683	40 6 16	2682
	Antares E.	50 5 45	2238	48 18 14	2240	46 30 45	2243	44 43 21	2245
	α Aquilæ E.	103 13 45	2793	101 39 8	2787	100 4 23	2783	98 29 33	2781
11	Sun W.	72 46 30	2566	74 26 12	2571	76 5 47	2575	77 45 17	2579
	Saturn W.	52 27 1	2332	54 12 14	2335	55 57 23	2337	57 42 28	2340
	Venus W.	48 11 30	2687	49 48 27	2689	51 25 22	2692	53 2 12	2695
	Antares E.	35 47 26	2263	34 0 32	2267	32 13 44	2271	30 27 2	2276
	α Aquilæ E.	90 35 7	2786	89 0 21	2790	87 25 40	2795	85 51 6	2802
	Fomalhaut E.	115 42 57	2789	114 8 14	2778	112 33 18	2769	110 58 9	2761
12	Sun W.	86 1 11	2604	87 40 1	2609	89 18 44	2615	90 57 19	2621
	Saturn W.	66 26 44	2358	68 11 19	2362	69 55 48	2368	71 40 9	2372
	Venus W.	61 5 17	2714	62 41 38	2719	64 17 52	2724	65 54 0	2729
	Spica W.	24 20 13	2327	26 5 33	2328	27 50 52	2330	29 36 8	2332
	Antares E.	21 35 28	2305	19 49 36	2313	18 3 55	2321	16 18 26	2330
	α Aquilæ E.	78 0 53	2852	76 27 32	2865	74 54 28	2879	73 21 42	2895
	Fomalhaut E.	103 0 26	2741	101 24 41	2741	99 48 55	2741	98 13 10	2742
13	Sun W.	99 8 16	2650	100 46 3	2657	102 23 41	2663	104 1 10	2669
	Venus W.	73 52 55	2757	75 28 19	2763	77 3 36	2769	78 38 45	2775
	Spica W.	38 21 23	2350	40 6 9	2355	41 50 48	2360	43 35 20	2365
	α Aquilæ E.	65 43 36	2998	64 13 20	3023	62 43 36	3051	61 14 26	3081
	Fomalhaut E.	90 15 12	2762	88 39 54	2769	87 4 45	2776	85 29 45	2783
	α Pegasi E.	111 13 33	2497	109 32 16	2499	107 51 2	2502	106 9 52	2506

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
14	Sun W.	105 38 31	2676	107 15 43	2683	108 52 45	2690	110 29 38	2697
	Venus W.	80 13 45	2782	81 48 37	2789	83 23 20	2795	84 57 55	2801
	Spica W.	45 19 45	2371	47 4 2	2376	48 48 11	2382	50 32 12	2387
	α Aquilæ E.	59 45 53	3114	58 18 0	3149	56 50 50	3187	55 24 25	3228
	Fomalhaut E.	83 54 55	2792	82 20 17	2802	80 45 51	2812	79 11 39	2824
	α Pegasi E.	104 28 47	2509	102 47 46	2513	101 6 51	2518	99 26 3	2522
15	Sun W.	118 31 43	2734	120 7 38	2741	121 43 23	2748	123 18 59	2757
	Venus W.	92 48 34	2838	94 22 13	2845	95 55 43	2852	97 29 4	2860
	Spica W.	59 10 12	2417	60 53 22	2424	62 36 22	2431	64 19 13	2437
	Antares W.	13 31 6	2436	15 13 50	2437	16 56 32	2440	18 39 10	2444
	α Aquilæ E.	48 25 55	3497	47 5 28	3567	45 46 18	3644	44 28 31	3729
	Fomalhaut E.	71 24 45	2895	69 52 19	2912	68 20 16	2931	66 48 37	2951
	α Pegasi E.	91 3 48	2551	89 23 46	2558	87 43 54	2565	86 4 11	2573
16	Venus W.	105 13 12	2901	106 45 30	2909	108 17 38	2918	109 49 34	2927
	Spica W.	72 51 5	2472	74 32 57	2480	76 14 39	2487	77 56 11	2494
	Antares W.	27 10 34	2472	28 52 26	2479	30 34 8	2486	32 15 41	2493
	Fomalhaut E.	59 17 17	3076	57 48 38	3106	56 20 36	3139	54 53 14	3175
	α Pegasi E.	77 48 21	2615	76 9 47	2625	74 31 26	2635	72 53 19	2646
	α Arietis E.	120 35 6	2489	118 53 38	2495	117 12 18	2502	115 31 8	2510
17	Spica W.	86 21 12	2533	88 1 39	2542	89 41 54	2549	91 21 59	2558
	Antares W.	40 40 53	2530	42 21 24	2539	44 1 43	2546	45 41 52	2555
	Fomalhaut E.	47 48 11	3403	46 25 58	3462	45 4 51	3526	43 44 55	3597
	α Pegasi E.	64 46 25	2705	63 9 52	2718	61 33 36	2732	59 57 39	2747
	α Arietis E.	107 7 48	2546	105 27 39	2554	103 47 41	2562	102 7 54	2570
18	Spica W.	99 39 26	2601	101 18 19	2610	102 57 0	2619	104 35 29	2629
	Antares W.	53 59 42	2597	55 38 41	2607	57 17 27	2615	58 56 2	2624
	Fomalhaut E.	37 26 53	4079	36 16 31	4212	35 8 16	4362	34 2 20	4530
	α Pegasi E.	52 3 10	2834	50 29 26	2855	48 56 10	2877	47 23 21	2901
	α Arietis E.	93 51 50	2613	92 13 13	2622	90 34 48	2631	88 56 35	2640
	Aldebaran E.	126 19 26	2666	124 42 1	2673	123 4 45	2679	121 27 37	2686
19	Spica W.	112 44 42	2677	114 21 53	2686	115 58 52	2696	117 35 37	2706
	Antares W.	67 5 46	2671	68 43 5	2680	70 20 11	2690	71 57 4	2700
	α Pegasi E.	39 47 35	3049	38 18 22	3087	36 49 56	3128	35 22 21	3174
	α Arietis E.	80 48 39	2687	79 11 42	2698	77 34 59	2708	75 58 29	2718
	Aldebaran E.	113 24 22	2724	111 48 14	2733	110 12 18	2741	108 36 33	2750
20	Antares W.	79 58 12	2750	81 33 46	2760	83 9 7	2770	84 44 14	2780
	α Aquilæ W.	36 41 28	4689	37 42 37	4560	38 45 36	4447	39 50 15	4347
	α Arietis E.	67 59 23	2769	66 24 15	2780	64 49 21	2790	63 14 40	2801
	Aldebaran E.	100 40 46	2796	99 6 13	2805	97 31 52	2816	95 57 45	2825
21	Antares W.	92 36 33	2830	94 10 22	2841	95 43 57	2850	97 17 20	2860
	α Aquilæ W.	45 33 24	3993	46 45 11	3944	47 57 46	3901	49 11 5	3862
	α Arietis E.	55 24 51	2856	53 51 36	2867	52 18 35	2878	50 45 48	2890
	Aldebaran E.	88 10 19	2876	86 37 29	2885	85 4 51	2896	83 32 27	2905
22	Antares W.	105 1 6	2908	106 33 14	2917	108 5 11	2927	109 36 56	2935
	α Aquilæ W.	55 26 20	3723	56 42 43	3703	57 59 27	3687	59 16 28	3671

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
14	Sun	W.	112 6 22	2704	113 42 57	2711	115 19 22	2719	116 55 37	2726
	Venus	W.	86 32 21	2808	88 6 38	2815	89 40 46	2822	91 14 45	2830
	Spica	W.	52 16 5	2393	53 59 50	2399	55 43 26	2405	57 26 54	2412
	α Aquilæ	E.	53 58 49	3272	52 34 5	3322	51 10 19	3375	49 47 34	3433
	Fomalhaut	E.	77 37 42	2836	76 4 1	2849	74 30 37	2863	72 57 31	2879
	α Pegasi	E.	97 45 21	2527	96 4 46	2533	94 24 18	2539	92 43 59	2545
15	Sun	W.	124 54 23	2765	126 29 37	2773	128 4 41	2782	129 39 33	2790
	Venus	W.	99 2 14	2868	100 35 14	2876	102 8 4	2884	103 40 43	2892
	Spica	W.	66 1 55	2444	67 44 27	2451	69 26 49	2458	71 9 2	2465
	Antares	W.	20 21 42	2449	22 4 7	2455	23 46 24	2460	25 28 34	2467
	α Aquilæ	E.	43 12 14	3823	41 57 36	3927	40 44 43	4043	39 33 46	4172
	Fomalhaut	E.	65 17 23	2973	63 46 37	2996	62 16 19	3021	60 46 32	3047
	α Pegasi	E.	84 24 39	2580	82 45 17	2589	81 6 7	2597	79 27 8	2606
16	Venus	W.	111 21 19	2936	112 52 52	2945	114 24 14	2954	115 55 25	2964
	Spica	W.	79 37 33	2502	81 18 44	2510	82 59 44	2517	84 40 33	2525
	Antares	W.	33 57 4	2500	35 38 17	2508	37 19 19	2515	39 0 12	2523
	Fomalhaut	E.	53 26 35	3213	52 0 41	3255	50 35 37	3301	49 11 26	3349
	α Pegasi	E.	71 15 26	2656	69 37 47	2668	68 0 24	2679	66 23 16	2692
	α Arietis	E.	113 50 8	2516	112 9 17	2524	110 28 37	2532	108 48 8	2538
17	Spica	W.	93 1 52	2567	94 41 33	2575	96 21 3	2584	98 0 20	2592
	Antares	W.	47 21 49	2563	49 1 35	2572	50 41 9	2580	52 20 32	2589
	Fomalhaut	E.	42 26 17	3674	41 9 2	3760	39 53 18	3855	38 39 12	3960
	α Pegasi	E.	58 22 2	2763	56 46 45	2779	55 11 50	2797	53 37 18	2815
	α Arietis	E.	100 28 18	2579	98 48 54	2587	97 9 41	2596	95 30 40	2604
18	Spica	W.	106 13 45	2638	107 51 48	2647	109 29 39	2657	111 7 17	2666
	Antares	W.	60 34 24	2634	62 12 33	2643	63 50 30	2652	65 28 15	2662
	Fomalhaut	E.	32 58 54	4721	31 58 12	4939	31 0 28	5190	30 5 59	5478
	α Pegasi	E.	45 51 3	2926	44 19 17	2953	42 48 5	2982	41 17 30	3014
	α Arietis	E.	87 18 34	2649	85 40 46	2659	84 3 11	2668	82 25 48	2678
	Aldebaran	E.	119 50 38	2693	118 13 49	2700	116 37 9	2708	115 0 40	2716
19	Spica	W.	119 12 9	2716	120 48 27	2726	122 24 32	2737	124 0 23	2747
	Antares	W.	73 33 44	2710	75 10 11	2720	76 46 24	2729	78 22 25	2740
	α Pegasi	E.	33 55 41	3226	32 30 3	3284	31 5 33	3349	29 42 18	3423
	α Arietis	E.	74 22 13	2728	72 46 10	2738	71 10 20	2749	69 34 45	2759
	Aldebaran	E.	107 1 0	2759	105 25 38	2768	103 50 28	2778	102 15 31	2787
20	Antares	W.	86 19 8	2790	87 53 49	2800	89 28 17	2810	91 2 32	2821
	α Aquilæ	W.	40 56 24	4259	42 3 55	4180	43 12 40	4110	44 22 32	4048
	α Arietis	E.	61 40 14	2812	60 6 2	2823	58 32 4	2835	56 58 21	2845
	Aldebaran	E.	94 23 50	2835	92 50 8	2845	91 16 39	2855	89 43 23	2865
21	Antares	W.	98 50 30	2870	100 23 27	2880	101 56 12	2889	103 28 45	2898
	α Aquilæ	W.	50 25 4	3827	51 39 38	3795	52 54 45	3768	54 10 20	3745
	α Arietis	E.	49 13 16	2901	47 40 58	2912	46 8 55	2923	44 37 6	2935
	Aldebaran	E.	82 0 15	2916	80 28 17	2926	78 56 31	2936	77 24 58	2946
22	Antares	W.	111 8 30	2945	112 39 52	2953	114 11 4	2961	115 42 5	2969
	α Aquilæ	W.	60 33 46	3659	61 51 17	3647	63 9 1	3636	64 26 56	3627

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
22	Fomalhaut W.	32 53 34	4833	33 52 43	4691	34 53 50	4566	35 56 44	4456
	α Arietis E.	43 5 32	2946	41 34 12	2958	40 3 7	2971	38 32 18	2982
	Aldebaran E.	75 53 38	2956	74 22 30	2966	72 51 34	2977	71 20 52	2986
23	α Aquilæ W.	65 45 1	3620	67 3 14	3614	68 21 34	3608	69 40 0	3601
	Fomalhaut W.	41 32 30	4071	42 43 0	4017	43 54 23	3969	45 6 33	3926
	α Pegasi W.	19 17 7	4741	20 17 32	4509	21 21 16	4320	22 27 50	4167
	α Arietis E.	31 2 5	3048	29 32 52	3064	28 3 58	3079	26 35 23	3096
	Aldebaran E.	63 50 21	3034	62 20 51	3043	60 51 32	3052	59 22 24	3062
24	α Aquilæ W.	76 13 11	3589	77 31 57	3589	78 50 43	3588	80 9 30	3588
	Fomalhaut W.	51 16 55	3768	52 32 31	3744	53 48 32	3723	55 4 55	3704
	α Pegasi W.	28 30 14	3710	29 46 51	3656	31 4 25	3609	32 22 50	3570
	Aldebaran E.	51 59 35	3107	50 31 34	3116	49 3 44	3124	47 36 4	3133
	Sun E.	134 8 33	3414	132 46 32	3419	131 24 37	3424	130 2 48	3429
25	α Aquilæ W.	86 43 20	3593	88 2 2	3594	89 20 43	3596	90 39 22	3598
	Fomalhaut W.	61 31 28	3627	62 49 33	3614	64 7 52	3604	65 26 22	3593
	α Pegasi W.	39 4 8	3433	40 25 48	3414	41 47 49	3396	43 10 10	3380
	Aldebaran E.	40 20 30	3181	38 53 58	3190	37 27 37	3202	36 1 30	3213
	Sun E.	123 14 56	3447	121 53 33	3450	120 32 13	3453	119 10 56	3454
26	α Aquilæ W.	97 11 56	3611	98 30 18	3615	99 48 36	3620	101 6 49	3623
	Fomalhaut W.	72 1 36	3547	73 21 8	3540	74 40 48	3532	76 0 37	3524
	α Pegasi W.	50 5 59	3318	51 29 50	3307	52 53 54	3297	54 18 9	3287
	Aldebaran E.	28 54 42	3289	27 30 18	3311	26 6 19	3336	24 42 49	3366
	Sun E.	112 24 49	3456	111 3 36	3455	109 42 22	3454	108 21 6	3452
27	α Aquilæ W.	107 36 50	3648	108 54 33	3653	110 12 10	3660	111 29 40	3667
	Fomalhaut W.	82 41 43	3489	84 2 20	3482	85 23 4	3475	86 43 56	3469
	α Pegasi W.	61 22 15	3240	62 47 37	3230	64 13 10	3220	65 38 55	3212
	Sun E.	101 34 6	3435	100 12 29	3430	98 50 47	3425	97 28 59	3419
28	Fomalhaut W.	93 30 6	3436	94 51 42	3430	96 13 25	3423	97 35 15	3417
	α Pegasi W.	72 50 29	3162	74 17 24	3151	75 44 32	3141	77 11 52	3129
	α Arietis W.	29 20 0	3081	30 48 33	3066	32 17 25	3052	33 46 33	3038
	Sun E.	90 38 7	3382	89 15 30	3373	87 52 43	3364	86 29 46	3354
29	Fomalhaut W.	104 26 4	3389	105 48 33	3385	107 11 6	3381	108 33 45	3378
	α Pegasi W.	84 31 59	3071	86 0 44	3060	87 29 43	3047	88 58 58	3034
	α Arietis W.	41 16 32	2969	42 47 23	2955	44 18 32	2941	45 49 59	2926
	Sun E.	79 31 59	3298	78 7 45	3286	76 43 17	3273	75 18 34	3260
30	Fomalhaut W.	115 27 49	3367	116 56 43	3368	118 13 36	3370	119 36 27	3373
	α Pegasi W.	96 29 11	2969	98 0 3	2955	99 31 12	2942	101 2 38	2928
	α Arietis W.	53 31 54	2852	55 5 15	2836	56 38 56	2820	58 12 58	2804
	Aldebaran W.	22 0 21	3153	23 27 26	3100	24 55 36	3052	26 24 45	3010
	Sun E.	68 10 55	3188	66 44 31	3172	65 17 49	3156	63 50 47	3140
31	α Pegasi W.	108 44 8	2860	110 17 18	2848	111 50 44	2834	113 24 28	2822
	α Arietis W.	66 8 29	2721	67 44 41	2704	69 21 16	2687	70 58 14	2669
	Aldebaran W.	34 2 16	2844	35 35 47	2816	37 9 54	2789	38 44 36	2764
	Sun E.	56 30 43	3057	55 1 41	3040	53 32 18	3022	52 2 33	3005

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
22	Fomalhaut W.	37 1 15	4359	38 7 13	4274	39 14 30	4198	40 22 58	4131
	α Arietis E.	37 1 43	2995	35 31 24	3008	34 1 21	3022	32 31 35	3034
	Aldebaran E.	69 50 21	2996	68 20 3	3006	66 49 58	3015	65 20 3	3025
23	α Aquilæ W.	70 58 32	3599	72 17 7	3596	73 35 46	3594	74 54 27	3591
	Fomalhaut W.	46 19 26	3887	47 32 59	3853	48 47 6	3822	50 1 46	3794
	α Pegasi W.	23 36 47	4041	24 47 46	3935	26 0 30	3847	27 14 44	3773
	α Arietis E.	25 7 9	3115	23 39 18	3136	22 11 52	3159	20 44 54	3187
	Aldebaran E.	57 53 28	3072	56 24 44	3080	54 56 10	3089	53 27 47	3098
24	α Aquilæ W.	81 28 17	3588	82 47 4	3588	84 5 51	3590	85 24 36	3591
	Fomalhaut W.	56 21 38	3685	57 38 41	3669	58 56 1	3654	60 13 37	3640
	α Pegasi W.	33 41 57	3535	35 1 43	3504	36 22 2	3477	37 42 52	3454
	Aldebaran E.	46 8 35	3143	44 41 17	3152	43 14 11	3161	41 47 15	3170
	Sun E.	128 41 5	3433	127 19 25	3438	125 57 52	3441	124 36 22	3445
25	α Aquilæ W.	91 57 58	3600	93 16 32	3603	94 35 3	3606	95 53 31	3609
	Fomalhaut W.	66 45 4	3583	68 3 57	3574	69 23 0	3565	70 42 13	3555
	α Pegasi W.	44 32 49	3366	45 55 44	3352	47 18 55	3340	48 42 20	3328
	Aldebaran E.	34 35 36	3225	33 9 57	3239	31 44 34	3254	30 19 28	3270
	Sun E.	117 49 40	3456	116 28 27	3456	115 7 14	3456	113 46 1	3457
26	α Aquilæ W.	102 24 59	3627	103 43 4	3631	105 1 5	3636	106 19 0	3641
	Fomalhaut W.	77 20 34	3516	78 40 40	3510	80 0 53	3503	81 21 14	3496
	α Pegasi W.	55 42 36	3277	57 7 14	3267	58 32 4	3258	59 57 4	3249
	Aldebaran E.	23 19 53	3401	21 57 38	3444	20 36 11	3497	19 15 43	3563
	Sun E.	106 59 48	3450	105 38 28	3447	104 17 5	3443	102 55 37	3440
27	α Aquilæ W.	112 47 2	3675	114 4 16	3684	115 21 20	3694	116 38 13	3704
	Fomalhaut W.	88 4 55	3462	89 26 2	3455	90 47 16	3449	92 8 37	3442
	α Pegasi W.	67 4 50	3202	68 30 57	3192	69 57 16	3183	71 23 46	3172
	Sun E.	96 7 4	3413	94 45 2	3406	93 22 52	3399	92 0 34	3391
28	Fomalhaut W.	98 57 12	3412	100 19 15	3406	101 41 25	3400	103 3 42	3395
	α Pegasi W.	78 39 26	3119	80 7 13	3107	81 35 14	3096	83 3 29	3083
	α Arietis W.	35 15 59	3024	36 45 42	3011	38 15 41	2997	39 45 58	2983
	Sun E.	85 6 37	3344	83 43 17	3333	82 19 44	3322	80 55 58	3311
29	Fomalhaut W.	109 56 27	3373	111 19 14	3371	112 42 4	3369	114 4 56	3368
	α Pegasi W.	90 28 28	3021	91 58 15	3009	93 28 17	2996	94 58 35	2982
	α Arietis W.	47 21 45	2912	48 53 48	2897	50 26 11	2882	51 58 53	2867
	Sun E.	73 53 36	3246	72 28 21	3232	71 2 50	3217	69 37 1	3203
30	Fomalhaut W.	120 59 14	3378	122 21 56	3384	123 44 31	3392	125 6 57	3402
	α Pegasi W.	102 34 22	2914	104 6 23	2901	105 38 40	2887	107 11 16	2874
	α Arietis W.	59 47 21	2788	61 22 5	2771	62 57 11	2754	64 32 39	2738
	Aldebaran W.	27 54 45	2971	29 25 34	2936	30 57 7	2903	32 29 22	2873
	Sun E.	62 23 26	3124	60 55 46	3107	59 27 45	3091	57 59 25	3074
31	α Pegasi W.	114 58 27	2809	116 32 43	2798	118 7 14	2786	119 42 1	2775
	α Arietis W.	72 35 35	2652	74 13 20	2635	75 51 28	2617	77 30 0	2599
	Aldebaran W.	40 19 51	2740	41 55 38	2716	43 31 56	2693	45 8 46	2670
	Sun E.	50 32 27	2988	49 1 59	2970	47 31 9	2953	45 59 57	2936

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Day of the Month.	Airy's Day Numbers—For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of E	F	G	H	Value of L
1	1·56775	0·96626	0·33097	1·36326	73·277
2	1·57056	0·97649	0·33157	1·36308	72·662
3	1·57330	0·98665	0·33216	1·36289	72·047
4	1·57601	0·99677	0·33275	1·36270	71·433
5	1·57865	1·00686	0·33333	1·36251	70·818
6	1·58123	1·01690	0·33390	1·36232	70·203
7	1·58377	1·02688	0·33446	1·36213	69·588
8	1·58622	1·03680	0·33502	1·36194	68·973
9	1·58864	1·04666	0·33557	1·36175	68·359
10	1·59100	1·05644	0·33612	1·36155	67·745
11	1·59331	1·06616	0·33666	1·36136	67·132
12	1·59556	1·07581	0·33719	1·36117	66·519
13	1·59775	1·08538	0·33772	1·36098	65·907
14	1·59988	1·09487	0·33825	1·36079	65·296
15	1·60196	1·10428	0·33876	1·36061	64·686
16	1·60399	1·11361	0·33927	1·36044	64·078
17	1·60596	1·12285	0·33977	1·36027	63·471
18	1·60788	1·13201	0·34027	1·36010	62·865
19	1·60974	1·14108	0·34076	1·35994	62·261
20	1·61155	1·15007	0·34125	1·35978	61·659
21	1·61331	1·15898	0·34173	1·35962	61·058
22	1·61501	1·16780	0·34220	1·35947	60·459
23	1·61666	1·17653	0·34267	1·35933	59·862
24	1·61825	1·18518	0·34313	1·35919	59·268
25	1·61979	1·19374	0·34359	1·35905	58·677
26	1·62127	1·20221	0·34404	1·35892	58·087
27	1·62270	1·21059	0·34449	1·35880	57·499
28	1·62408	1·21889	0·34493	1·35869	56·913
29	1·62540	1·22709	0·34537	1·35859	56·331
30	1·62667	1·23520	0·34580	1·35850	55·753
31	1·62788	1·24322	0·34623	1·35841	55·177
32	1·62904	1·25115	0·34665	1·35833	54·605

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Day of the Month.	Bessel's Day Numbers— For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of A	B	C	D	Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding $0^d.965193$. Days.	From Mean Noon of January 1. Day of the Year.	Fraction of the Year.*
					h m s			
1	+1·0778	−1·1972	+9·9744	−0·2830	15 17 11·16	131	212	·5804
2	1·0864	1·1911	9·9758	0·2852	15 13 15·25	132	213	·5832
3	1·0948	1·1848	9·9771	0·2875	15 9 19·34	133	214	·5859
4	+1·1028	−1·1782	+9·9784	−0·2897	15 5 23·43	134	215	·5887
5	1·1106	1·1714	9·9797	0·2920	15 1 27·52	135	216	·5914
6	1·1182	1·1644	9·9810	0·2942	14 57 31·61	136	217	·5941
7	+1·1255	−1·1572	+9·9823	−0·2964	14 53 35·70	137	218	·5969
8	1·1325	1·1497	9·9836	0·2987	14 49 39·79	138	219	·5996
9	1·1394	1·1420	9·9848	0·3009	14 45 43·88	139	220	·6023
10	+1·1460	−1·1339	+9·9860	−0·3031	14 41 47·97	140	221	·6051
11	1·1523	1·1256	9·9872	0·3052	14 37 52·06	141	222	·6078
12	1·1585	1·1170	9·9884	0·3073	14 33 56·15	142	223	·6106
13	+1·1645	−1·1082	+9·9896	−0·3094	14 30 0·24	143	224	·6133
14	1·1703	1·0990	9·9908	0·3115	14 26 4·33	144	225	·6160
15	1·1758	1·0894	9·9919	0·3135	14 22 8·42	145	226	·6188
16	+1·1812	−1·0796	+9·9930	−0·3155	14 18 12·51	146	227	·6215
17	1·1864	1·0693	9·9941	0·3174	14 14 16·61	147	228	·6242
18	1·1914	1·0587	9·9952	0·3193	14 10 20·70	148	229	·6270
19	+1·1963	−1·0477	+9·9963	−0·3211	14 6 24·79	149	230	·6297
20	1·2010	1·0363	9·9974	0·3229	14 2 28·88	150	231	·6325
21	1·2055	1·0245	9·9985	0·3246	13 58 32·97	151	232	·6352
22	+1·2098	−1·0121	+9·9995	−0·3262	13 54 37·06	152	233	·6379
23	1·2140	0·9993	0·0005	0·3278	13 50 41·15	153	234	·6407
24	1·2180	0·9860	0·0015	0·3293	13 46 45·25	154	235	·6434
25	+1·2218	−0·9721	+0·0026	−0·3307	13 42 49·34	155	236	·6461
26	1·2255	0·9576	0·0036	0·3320	13 38 53·43	156	237	·6489
27	1·2291	0·9425	0·0045	0·3333	13 34 57·52	157	238	·6516
28	+1·2325	−0·9267	+0·0055	−0·3345	13 31 1·61	158	239	·6544
29	1·2357	0·9102	0·0065	0·3356	13 27 5·71	159	240	·6571
30	1·2389	0·8928	0·0074	0·3366	13 23 9·80	160	241	·6598
31	1·2418	0·8746	0·0083	0·3375	13 19 13·89	161	242	·6626
32	+1·2446	−0·8555	+0·0093	−0·3384	13 15 17·98	162	243	·6653

* Add ·0031 if Fraction be required for the time t, see page 327.

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AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 hour.	THE SUN'S Apparent Declination.	Diff. for 1 hour.	Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, *to be subtracted from Apparent Time.*	Diff. for 1 hour.
		h m s	s	° ′ ″	″	m s	m s	s
Sun.	1	10 42 19·64	9·068	N. 8 12 33·6	54·74	1 4·40	0 11·70	0·787
Mon.	2	10 45 57·26	9·057	7 50 39·9	55·06	1 4·35	0 30·58	0·798
Tues.	3	10 49 34·62	9·047	7 28 38·7	55·36	1 4·31	0 49·72	0·808
Wed.	4	10 53 11·74	9·036	7 6 30·1	55·65	1 4·28	1 9·11	0·818
Thur.	5	10 56 48·61	9·026	6 44 14·5	55·93	1 4·24	1 28·75	0·827
Frid.	6	11 0 25·24	9·018	6 21 52·3	56·19	1 4·21	1 48·60	0·836
Sat.	7	11 4 1·67	9·010	5 59 23·9	56·43	1 4·18	2 8·67	0·845
Sun.	8	11 7 37·90	9·002	5 36 49·6	56·66	1 4·15	2 28·94	0·852
Mon.	9	11 11 13·95	8·995	5 14 9·7	56·88	1 4·13	2 49·39	0·858
Tues.	10	11 14 49·84	8·989	4 51 24·5	57·08	1 4·12	3 9·99	0·864
Wed.	11	11 18 25·58	8·984	4 28 34·6	57·27	1 4·10	3 30·74	0·870
Thur.	12	11 22 1·20	8·980	4 5 40·1	57·45	1 4·09	3 51·62	0·874
Frid.	13	11 25 36·71	8·976	3 42 41·4	57·61	1 4·07	4 12·61	0·878
Sat.	14	11 29 12·13	8·973	3 19 38·7	57·76	1 4·06	4 33·69	0·881
Sun.	15	11 32 47·47	8·971	2 56 32·5	57·90	1 4·05	4 54·84	0·883
Mon.	16	11 36 22·78	8·970	2 33 23·0	58 02	1 4·05	5 16·02	0·884
Tues.	17	11 39 58·07	8·970	2 10 10·5	58·13	1 4·05	5 37·23	0·884
Wed.	18	11 43 33·36	8·972	1 46 55·4	58·23	1 4·06	5 58·44	0·882
Thur.	19	11 47 8·67	8·974	1 23 37·9	58·31	1 4·06	6 19·62	0·880
Frid.	20	11 50 44·03	8·977	1 0 18·4	58·38	1 4·07	6 40·75	0·877
Sat.	21	11 54 19·46	8·980	0 36 57·2	58·45	1 4·08	7 1·82	0·874
Sun.	22	11 57 54·98	8·985	N. 0 13 34·5	58·49	1 4·09	7 22·79	0·869
Mon.	23	12 1 30·62	8·991	S. 0 9 49·2	58·52	1 4·11	7 43·65	0·863
Tues.	24	12 5 6·41	8·998	0 33 13·7	58·53	1 4·13	8 4·35	0·856
Wed.	25	12 8 42·37	9·006	0 56 38·7	58·54	1 4·16	8 24·89	0·848
Thur.	26	12 12 18·51	9·015	1 20 3·7	58·52	1 4·18	8 45·25	0·839
Frid.	27	12 15 54·87	9·025	1 43 28·3	58·50	1 4·21	9 5·39	0·830
Sat.	28	12 19 31·46	9·035	2 6 52·4	58·47	1 4·24	9 25·30	0·819
Sun.	29	12 23 8·30	9·046	2 30 15·7	58·41	1 4·28	9 44·96	0·808
Mon.	30	12 26 45·41	9·058	2 53 37·5	58·33	1 4·32	10 4·35	0·796
Tues.	31	12 30 22·80		S. 3 16 57·5		1 4·36	10 23·46	

* *Mean* Time of the Semidiameter passing may be found by subtracting 0ˢ·18 from the *Sidereal* Time.

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AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S *Apparent* Right Ascension.	THE SUN'S *Apparent* Declination.	THE SUN'S Semidiam.*	Equation of Time, *to be added to Mean Time.*	Sidereal Time.
		h m s	° ′ ″	′ ″	m s	h m s
Sun.	1	10 42 19·67	N. 8 12 33·4	15 53·6	0 11·70	10 42 31·37
Mon.	2	10 45 57·34	7 50 39·4	15 53·9	0 30·59	10 46 27·93
Tues.	3	10 49 34·75	7 28 37·9	15 54·1	0 49·73	10 50 24·48
Wed.	4	10 53 11·91	7 6 29·0	15 54·4	1 9·12	10 54 21·03
Thur.	5	10 56 48·82	6 44 13·1	15 54·6	1 28·77	10 58 17·58
Frid.	6	11 0 25·51	6 21 50·6	15 54·9	1 48·63	11 2 14·14
Sat.	7	11 4 1·99	5 59 21·9	15 55·1	2 8·70	11 6 10·69
Sun.	8	11 7 38·27	5 36 47·2	15 55·4	2 28·98	11 10 7·25
Mon.	9	11 11 14·37	5 14 7·0	15 55·6	2 49·43	11 14 3·80
Tues.	10	11 14 50·31	4 51 21·6	15 55·9	3 10·04	11 18 0·35
Wed.	11	11 18 26·11	4 28 31·3	15 56·1	3 30·79	11 21 56·90
Thur.	12	11 22 1·78	4 5 36·4	15 56·4	3 51·68	11 25 53·46
Frid.	13	11 25 37·34	3 42 37·3	15 56·6	4 12·67	11 29 50·01
Sat.	14	11 29 12·81	3 19 34·3	15 56·9	4 33·76	11 33 46·57
Sun.	15	11 32 48·21	2 56 27·8	15 57·2	4 54·91	11 37 43·12
Mon.	16	11 36 23·57	2 33 17·9	15 57·5	5 16·10	11 41 39·67
Tues.	17	11 39 58·91	2 10 5·1	15 57·7	5 37·31	11 45 36·22
Wed.	18	11 43 34·25	1 46 49·6	15 58·0	5 58·53	11 49 32·78
Thur.	19	11 47 9·61	1 23 31·8	15 58·2	6 19·72	11 53 29·33
Frid.	20	11 50 45·03	1 0 11·9	15 58·5	6 40·85	11 57 25·88
Sat.	21	11 54 20·51	0 36 50·3	15 58·8	7 1·92	12 1 22·43
Sun.	22	11 57 56·09	N. 0 13 27·3	15 59·1	7 22·90	12 5 18·99
Mon.	23	12 1 31·78	S. 0 9 56·7	15 59·3	7 43·76	12 9 15·54
Tues.	24	12 5 7·62	0 33 21·6	15 59·6	8 4·47	12 13 12·09
Wed.	25	12 8 43·63	0 56 47·0	15 59·8	8 25·01	12 17 8·64
Thur.	26	12 12 19·83	1 20 12·2	16 0·1	8 45·37	12 21 5·20
Frid.	27	12 15 56·24	1 43 37·2	16 0·4	9 5·51	12 25 1·75
Sat.	28	12 19 32·88	2 7 1·7	16 0·7	9 25·42	12 28 58·30
Sun.	29	12 23 9·77	2 30 25·2	16 0·9	9 45·09	12 32 54·86
Mon.	30	12 26 46·93	2 53 47·3	16 1·2	10 4·48	12 36 51·41
Tues.	31	12 30 24·37	S. 3 17 7·6	16 1·4	10 23·59	12 40 47·96

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

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MEAN TIME.

Day of the Month.	THE SUN'S *Apparent* Longitude. *Noon.*	THE SUN'S *Apparent* Latitude. *Noon.*	Logarithm of the Radius Vector of the Earth. *Noon.*	THE MOON'S Semidiameter. *Noon.*	THE MOON'S Semidiameter. *Midnight.*	THE MOON'S Horizontal Parallax. *Noon.*	THE MOON'S Horizontal Parallax. *Midnight.*
	° ′ ″	″		′ ″	′ ″	′ ″	′ ″
1	158 58 47·3	N.0·09	0·0037089	15 39·1	15 46·1	57 18·5	57 44·3
2	159 56 57·2	S.0·03	0·0036040	15 53·1	15 59·9	58 9·9	58 34·8
3	160 55 8·9	0·14	0·0034975	16 6·4	16 12·3	58 58·3	59 19·9
4	161 53 22·5	0·22	0·0033893	16 17·5	16 22·0	59 39·2	59 55·5
5	162 51 37·8	0·28	0·0032795	16 25·6	16 28·2	60 8·7	60 18·2
6	163 49 54·9	0·31	0·0031680	16 29·8	16 30·4	60 24·2	60 26·3
7	164 48 13·6	0·32	0·0030550	16 30·0	16 28·7	60 25·0	60 20·1
8	165 46 34·0	0·29	0·0029406	16 26·5	16 23·6	60 12·1	60 1·4
9	166 44 56·0	0·22	0·0028248	16 20·0	16 16·0	59 48·4	59 33·5
10	167 43 19·6	0·13	0·0027079	16 11·5	16 6·7	59 17·1	58 59·7
11	168 41 44·7	S.0·03	0·0025900	16 1·8	15 56·8	58 41·5	58 23·1
12	169 40 11·5	N.0·10	0·0024712	15 51·7	15 46·7	58 4·6	57 46·2
13	170 38 39·8	0·23	0·0023517	15 41·7	15 36·9	57 28·1	57 10·5
14	171 37 9·7	0·35	0·0022315	15 32·3	15 27·7	56 53·4	56 36·9
15	172 35 41·2	0·47	0·0021109	15 23·4	15 19·2	56 20·9	56 5·6
16	173 34 14·5	0·58	0·0019900	15 15·2	15 11·4	55 50·9	55 36·9
17	174 32 49·6	0·67	0·0018689	15 7·7	15 4·3	55 23·5	55 10·9
18	175 31 26·5	0·73	0·0017477	15 1·0	14 58·0	54 59·0	54 48·0
19	176 30 5·2	0·77	0·0016266	14 55·2	14 52·7	54 37·9	54 28·7
20	177 28 45·9	0·78	0·0015055	14 50·5	14 48·7	54 20·7	54 13·9
21	178 27 28·7	0·76	0·0013845	14 47·2	14 46·2	54 8·6	54 4·8
22	179 26 13·5	0·70	0·0012636	14 45·6	14 45·5	54 2·6	54 2·3
23	180 25 0·5	0·62	0·0011428	14 46·0	14 46·9	54 3·9	54 7·5
24	181 23 49·7	0·51	0·0010220	14 48·6	14 50·8	54 13·4	54 21·6
25	182 22 41·1	0·39	0·0009011	14 53·7	14 57·2	54 32·1	54 45·0
26	183 21 34·9	0·26	0·0007800	15 1·4	15 6·2	55 0·3	55 18·0
27	184 20 31·0	N.0·12	0·0006587	15 11·7	15 17·7	55 38·0	56 0·3
28	185 19 29·5	S.0·02	0·0005370	15 24·4	15 31·5	56 24·6	56 50·6
29	186 18 30·2	0·15	0·0004148	15 38·9	15 46·7	57 17·9	57 46·2
30	187 17 33·1	0·26	0·0002922	15 54·5	16 2·3	58 14·9	58 43·4
31	188 16 38·3	S.0·36	0·0001691	16 9·9	16 17·1	59 11·2	59 37·5

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MEAN TIME.

THE MOON'S

Day of the Week.	Day of the Month.	Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.	Age. Noon.	Meridian Passage.
		° ′ ″	° ′ ″	° ′ ″	° ′ ″	d	h m
Sun.	1	114 31 2·2	121 11 8·0	S. 1 6 13·9	S. 1 40 31·7	26·0	21 48·1
Mon.	2	127 57 49·7	134 51 6·6	2 13 56·1	2 45 53·4	27·0	22 39·4
Tues.	3	141 50 48·0	148 56 32·5	3 15 48·9	3 43 6·8	28·0	23 30·2
Wed.	4	156 7 47·7	163 23 51·5	4 7 12·6	4 27 33·5	29·0	6
Thur.	5	170 43 52·0	178 6 50·5	4 43 40·9	4 55 10·8	0·6	0 20·9
Frid.	6	185 31 43·4	192 57 24·8	5 1 46·0	5 3 17·0	1·6	1 12·6
Sat.	7	200 22 50·0	207 46 58·4	4 59 41·2	4 51 4·4	2·6	2 6·0
Sun.	8	215 8 54·9	222 27 52·2	4 37 39·9	4 19 46·7	3·6	3 1·7
Mon.	9	229 43 12·6	236 54 27·5	3 57 49·2	3 32 16·7	4·6	3 59·8
Tues.	10	244 1 17·8	251 3 32·7	3 3 40·2	2 32 32·7	5·6	4 59·6
Wed.	11	258 1 9·1	264 54 9·8	1 59 28·2	1 25 0·2	6·6	5 59·4
Thur.	12	271 42 42·7	278 26 59·5	S. 0 49 41·4	S. 0 14 3·6	7·6	6 57·6
Frid.	13	285 7 13·7	291 43 40·1	N. 0 21 23·8	N. 0 56 11·9	8·6	7 52·7
Sat.	14	298 16 33·3	304 46 7·8	1 29 54·5	2 2 7·1	9·6	8 44·2
Sun.	15	311 12 36·4	317 36 10·7	2 32 28·2	3 0 37·0	10·6	9 32·1
Mon.	16	323 57 0·3	330 15 13·2	3 26 16·3	3 49 10·7	11·6	10 17·2
Tues.	17	336 30 55·8	342 44 12·9	4 9 7·3	4 25 55·8	12·6	11 0·3
Wed.	18	348 55 9·2	355 3 48·3	4 39 28·3	4 49 39·3	13·6	11 42·2
Thur.	19	1 10 14·8	7 14 33·7	4 56 25·5	4 59 46·8	14·6	12 23·9
Frid.	20	13 16 51·7	19 17 17·3	4 59 43·8	4 56 20·3	15·6	13 6·0
Sat.	21	25 16 1·2	31 13 17·0	4 49 41·2	4 39 53·1	16·6	13 49·5
Sun.	22	37 9 21·1	43 4 32·8	4 27 3·8	4 11 22·4	17·6	14 34·6
Mon.	23	48 59 14·8	54 53 52·8	3 52 58·7	3 32 3·5	18·6	15 21·7
Tues.	24	60 48 55·2	66 44 53·7	3 8 48·2	2 43 25·0	19·6	16 10·8
Wed.	25	72 42 22·6	78 41 57·9	2 16 7·2	1 47 8·0	20·6	17 1·4
Thur.	26	84 44 18·1	90 50 2·2	1 16 42·6	N. 0 45 6·9	21·6	17 52·8
Frid.	27	96 59 50·3	103 14 22·4	N. 0 12 38·4	S. 0 20 23·9	22·6	18 44·3
Sat.	28	109 34 17·0	116 0 9·9	S. 0 53 38·9	1 26 43·4	23·6	19 35·5
Sun.	29	122 32 33·7	129 11 55·1	1 59 11·9	2 30 36·0	24·6	20 26·0
Mon.	30	135 58 33·8	142 52 40·7	3 0 25·8	3 28 9·0	25·6	21 16·2
Tues.	31	149 54 15·7	157 3 6·6	S. 3 53 12·3	S. 4 15 1·7	26·6	22 6·6

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MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SUNDAY 1.				*TUESDAY* 3.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	7 44 54·57	N.20 8 52·4	87·14	0	9 32 35·26	N.11 8 42·7	135·28
1	7 47 11·05	20 0 9·6	88·34	1	9 34 48·03	10 55 11·0	136·02
2	7 49 27·46	19 51 19·6	89·53	2	9 37 0·75	10 41 34·9	136·75
3	7 51 43·79	19 42 22·4	90·72	3	9 39 13·41	10 27 54·4	137·47
4	7 54 0·05	19 33 18·0	91·90	4	9 41 26·02	10 14 9·6	138·17
5	7 56 16·23	19 24 6·6	93·08	5	9 43 38·59	10 0 20·5	138·86
6	7 58 32·33	19 14 48·1	94·25	6	9 45 51·11	9 46 27·3	139·54
7	8 0 48·36	19 5 22·6	95·41	7	9 48 3·58	9 32 30·1	140·20
8	8 3 4·31	18 55 50·2	96·56	8	9 50 16·01	9 18 28·9	140·85
9	8 5 20·18	18 46 10·8	97·71	9	9 52 28·41	9 4 23·8	141·49
10	8 7 35·97	18 36 24·5	98·85	10	9 54 40·76	8 50 14·9	142·11
11	8 9 51·68	18 26 31·4	99·98	11	9 56 53·08	8 36 2·2	142·72
12	8 12 7·30	18 16 31·5	101·11	12	9 59 5·37	8 21 45·9	143·32
13	8 14 22·84	18 6 24·8	102·23	13	10 1 17·63	8 7 26·0	143·90
14	8 16 38·30	17 56 11·5	103·34	14	10 3 29·86	7 53 2·6	144·47
15	8 18 53·67	17 45 51·5	104·44	15	10 5 42·07	7 38 35·8	145·02
16	8 21 8·95	17 35 24·8	105·53	16	10 7 54·25	7 24 5·6	145·56
17	8 23 24·16	17 24 51·6	106·62	17	10 10 6·42	7 9 32·2	146·09
18	8 25 39·28	17 14 11·9	107·69	18	10 12 18·57	6 54 55·7	146·60
19	8 27 54·31	17 3 25·8	108·76	19	10 14 30·70	6 40 16·1	147·09
20	8 30 9·26	16 52 33·2	109·81	20	10 16 42·83	6 25 33·5	147·58
21	8 32 24·12	16 41 34·3	110·86	21	10 18 54·94	6 10 48·0	148·04
22	8 34 38·90	16 30 29·1	111·90	22	10 21 7·05	5 55 59·8	148·49
23	8 36 53·59	N.16 19 17·7	112·93	23	10 23 19·16	N. 5 41 8·8	148·93
	MONDAY 2.				*WEDNESDAY* 4.		
0	8 39 8·20	N.16 8 0·1	113·95	0	10 25 31·27	N. 5 26 15·2	149·36
1	8 41 22·73	15 56 36·4	114·96	1	10 27 43·38	5 11 19·1	149·76
2	8 43 37·17	15 45 6·6	115·96	2	10 29 55·50	4 56 20·5	150·16
3	8 45 51·52	15 33 30·8	116·96	3	10 32 7·63	4 41 19·5	150·54
4	8 48 5·80	15 21 49·1	117·94	4	10 34 19·77	4 26 16·3	150·89
5	8 50 19·99	15 10 1·5	118·91	5	10 36 31·93	4 11 10·9	151·24
6	8 52 34·10	14 58 8·0	119·87	6	10 38 44·10	3 56 3·5	151·57
7	8 54 48·13	14 46 8·8	120·82	7	10 40 56·30	3 40 54·0	151·88
8	8 57 2·08	14 34 3·9	121·76	8	10 43 8·52	3 25 42·7	152·18
9	8 59 15·95	14 21 53·3	122·69	9	10 45 20·77	3 10 29·6	152·46
10	9 1 29·74	14 9 37·1	123·61	10	10 47 33·05	2 55 14·9	152·73
11	9 3 43·45	13 57 15·5	124·52	11	10 49 45·37	2 39 58·5	152·98
12	9 5 57·09	13 44 48·4	125·42	12	10 51 57·73	2 24 40·6	153·22
13	9 8 10·65	13 32 15·9	126·30	13	10 54 10·13	2 9 21·3	153·44
14	9 10 24·14	13 19 38·1	127·18	14	10 56 22·57	1 54 0·7	153·64
15	9 12 37·56	13 6 55·0	128·04	15	10 58 35·06	1 38 38·8	153·83
16	9 14 50·90	12 54 6·7	128·90	16	11 0 47·60	1 23 15·8	154·00
17	9 17 4·17	12 41 13·3	129·73	17	11 3 0·19	1 7 51·8	154·15
18	9 19 17·37	12 28 14·9	130·56	18	11 5 12·84	0 52 26·9	154·29
19	9 21 30·51	12 15 11·5	131·38	19	11 7 25·56	0 37 1·2	154·41
20	9 23 43·59	12 2 3·3	132·18	20	11 9 38·34	0 21 34·8	154·51
21	9 25 56·60	11 48 50·2	132·98	21	11 11 51·18	N. 0 6 7·7	154·60
22	9 28 9 54	11 35 32·3	133·75	22	11 14 4·10	S. 0 9 19·9	154·67
23	9 30 22·43	11 22 9·8	134·52	23	11 16 17·10	0 24 47·9	154·72
24	9 32 35·26	N.11 8 42·7		24	11 18 30·17	S. 0 40 16·3	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 5.				*SATURDAY* 7.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	11 18 30·17	S. 0 40 16·3	154·76	0	13 7 34·35	S. 12 35 24·4	136·10
1	11 20 43·32	0 55 44·9	154·78	1	13 9 55·15	12 49 1·0	135·29
2	11 22 56·56	1 11 13·6	154·79	2	13 12 16·17	13 2 32·8	134·46
3	11 25 9·89	1 26 42·3	154·77	3	13 14 37·41	13 15 59·6	133·61
4	11 27 23·31	1 42 10·9	154·74	4	13 16 58·88	13 29 21·3	132·75
5	11 29 36·83	1 57 39·4	154·69	5	13 19 20·57	13 42 37·8	131·87
6	11 31 50·45	2 13 7·6	154·62	6	13 21 42·49	13 55 49·0	130·97
7	11 34 4·17	2 28 35·4	154·54	7	13 24 4·64	14 8 54·8	130·05
8	11 36 17·99	2 44 2·6	154·44	8	13 26 27·02	14 21 55·1	129·12
9	11 38 31·92	2 59 29·2	154·32	9	13 28 49·62	14 34 49·8	128·17
10	11 40 45·97	3 14 55·1	154·19	10	13 31 12·46	14 47 38·9	127·20
11	11 43 0·14	3 30 20·3	154·04	11	13 33 35·53	15 0 22·1	126·23
12	11 45 14·42	3 45 44·5	153·87	12	13 35 58·83	15 12 59·4	125·24
13	11 47 28·83	4 1 7·7	153·68	13	13 38 22·37	15 25 30·8	124·23
14	11 49 43·36	4 16 29·8	153·48	14	13 40 46·14	15 37 56·2	123·20
15	11 51 58·02	4 31 50·7	153·26	15	13 43 10·14	15 50 15·4	122·16
16	11 54 12·81	4 47 10·2	153·02	16	13 45 34·37	16 2 28·4	121·09
17	11 56 27·74	5 2 28·3	152·76	17	13 47 58·84	16 14 35·0	120·02
18	11 58 42·81	5 17 44·9	152·49	18	13 50 23·54	16 26 35·1	118·93
19	12 0 58·02	5 32 59·9	152·20	19	13 52 48·48	16 38 28·6	117·82
20	12 3 13·38	5 48 13·1	151·89	20	13 55 13·65	16 50 15·5	116·69
21	12 5 28·88	6 3 24·4	151·56	21	13 57 39·05	17 1 55·7	115·56
22	12 7 44·54	6 18 33·8	151·22	22	14 0 4·68	17 13 29·1	114·41
23	12 10 0·35	S. 6 33 41·1	150·86	23	14 2 30·54	S. 17 24 55·5	113·24
	FRIDAY 6.				*SUNDAY* 8.		
0	12 12 16·32	S. 6 48 46·3	150·48	0	14 4 56·64	S. 17 36 14·9	112·07
1	12 14 32·45	7 3 49·2	150·09	1	14 7 22·97	17 47 27·3	110·87
2	12 16 48·74	7 18 49·7	149·67	2	14 9 49·53	17 58 32·6	109·67
3	12 19 5·20	7 33 47·7	149·24	3	14 12 16·31	18 9 30·6	108·44
4	12 21 21·84	7 48 43·2	148·79	4	14 14 43·33	18 20 21·2	107·20
5	12 23 38·64	8 3 35·9	148·32	5	14 17 10·57	18 31 4·4	105·95
6	12 25 55·62	8 18 25·8	147·83	6	14 19 38·03	18 41 40·1	104·69
7	12 28 12·78	8 33 12·8	147·33	7	14 22 5·71	18 52 8·3	103·41
8	12 30 30·12	8 47 56·8	146·81	8	14 24 33·62	19 2 28·8	102·12
9	12 32 47·65	9 2 37·7	146·27	9	14 27 1·75	19 12 41·5	100·81
10	12 35 5·37	9 17 15·3	145·72	10	14 29 30·10	19 22 46·4	99·50
11	12 37 23·27	9 31 49·6	145·14	11	14 31 58·66	19 32 43·4	98·17
12	12 39 41·37	9 46 20·5	144·55	12	14 34 27·43	19 42 32·4	96·83
13	12 41 59·66	10 0 47·8	143·94	13	14 36 56·42	19 52 13·4	95·47
14	12 44 18·15	10 15 11·5	143·32	14	14 39 25·61	20 1 46·2	94·10
15	12 46 36·83	10 29 31·4	142·67	15	14 41 55·01	20 11 10·8	92·73
16	12 48 55·72	10 43 47·5	142·01	16	14 44 24·62	20 20 27·2	91·34
17	12 51 14·81	10 57 59·6	141·34	17	14 46 54·42	20 29 35·2	89·94
18	12 53 34·11	11 12 7·6	140·64	18	14 49 24·42	20 38 34·8	88·52
19	12 55 53·62	11 26 11·4	139·93	19	14 51 54·61	20 47 25·9	87·10
20	12 58 13·34	11 40 11·0	139·20	20	14 54 25·00	20 56 8·5	85·66
21	13 0 33·27	11 54 6·2	138·45	21	14 56 55·57	21 4 42·5	84·22
22	13 2 53·41	12 7 56·9	137·68	22	14 59 26·32	21 13 7·8	82·76
23	13 5 13·77	12 21 43·0	136·90	23	15 1 57·25	21 21 24·4	81·30
24	13 7 34·35	S. 12 35 24·4		24	15 4 28·36	S. 21 29 32·2	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 9.		
	h m s	° ′ ″	″
0	15 4 28·36	S. 21 29 32·2	79·82
1	15 6 59·64	21 37 31·2	78·34
2	15 9 31·09	21 45 21·2	76·84
3	15 12 2·71	21 53 2·2	75·34
4	15 14 34·48	22 0 34·2	73·82
5	15 17 6·41	22 7 57·2	72·30
6	15 19 38·49	22 15 11·0	70·77
7	15 22 10·71	22 22 15·7	69·24
8	15 24 43·08	22 29 11·1	67·69
9	15 27 15·58	22 35 57·2	66·14
10	15 29 48·21	22 42 34·0	64·58
11	15 32 20·96	22 49 1·5	63·01
12	15 34 53·84	22 55 19·6	61·43
13	15 37 26·83	23 1 28·2	59·85
14	15 39 59·94	23 7 27·3	58·26
15	15 42 33·15	23 13 16·9	56·67
16	15 45 6·45	23 18 56·9	55·07
17	15 47 39·85	23 24 27·3	53·46
18	15 50 13·34	23 29 48·0	51·85
19	15 52 46·91	23 34 59·1	50·24
20	15 55 20·55	23 40 0·6	48·62
21	15 57 54·26	23 44 52·3	46·99
22	16 0 28·03	23 49 34·2	45·36
23	16 3 1·87	S. 23 54 6·4	43·73
	TUESDAY 10.		
0	16 5 35·75	S. 23 58 28·8	42·09
1	16 8 9·68	24 2 41·4	40·45
2	16 10 43·64	24 6 44·1	38·81
3	16 13 17·64	24 10 37·0	37·17
4	16 15 51·66	24 14 20·0	35·52
5	16 18 25·70	24 17 53·1	33·88
6	16 20 59·75	24 21 16·4	32·23
7	16 23 33·80	24 24 29·8	30·58
8	16 26 7·85	24 27 33·3	28·93
9	16 28 41·89	24 30 26·8	27·27
10	16 31 15·91	24 33 10·4	25·62
11	16 33 49·91	24 35 44·1	23·96
12	16 36 23·89	24 38 7·9	22·31
13	16 38 57·83	24 40 21·8	20·66
14	16 41 31·73	24 42 25·8	19·01
15	16 44 5·57	24 44 19·8	17·36
16	16 46 39·36	24 46 3·9	15·71
17	16 49 13·09	24 47 38·1	14·06
18	16 51 46·74	24 49 2·5	12·42
19	16 54 20·31	24 50 17·0	10·77
20	16 56 53·80	24 51 21·7	9·13
21	16 59 27·20	24 52 16·5	7·49
22	17 2 0·50	24 53 1·4	5·86
23	17 4 33·70	24 53 36·5	4·22
24	17 7 6·78	S. 24 54 1·9	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 11.		
	h m s	° ′ ″	″
0	17 7 6·78	S. 24 54 1·9	2·59
1	17 9 39·75	24 54 17·5	0·97
2	17 12 12·59	24 54 23·3	0·65
3	17 14 45·29	24 54 19·4	2·27
4	17 17 17·86	24 54 5·7	3·88
5	17 19 50·29	24 53 42·4	5·49
6	17 22 22·56	24 53 9·5	7·09
7	17 24 54·67	24 52 27·0	8·69
8	17 27 26·62	24 51 34·9	10·28
9	17 29 58·41	24 50 33·2	11·86
10	17 32 30·01	24 49 22·0	13·44
11	17 35 1·43	24 48 1·4	15·01
12	17 37 32·67	24 46 31·3	16·58
13	17 40 3·71	24 44 51·8	18·14
14	17 42 34·55	24 43 3·0	19·69
15	17 45 5·18	24 41 4·8	21·24
16	17 47 35·60	24 38 57·4	22·78
17	17 50 5·80	24 36 40·7	24·31
18	17 52 35·78	24 34 14·9	25·82
19	17 55 5·53	24 31 39·9	27·34
20	17 57 35·04	24 28 55·9	28·85
21	18 0 4·32	24 26 2·8	30·34
22	18 2 33·35	24 23 0·8	31·83
23	18 5 2·13	S. 24 19 49·8	33·31
	THURSDAY 12.		
0	18 7 30·66	S. 24 16 29·9	34·78
1	18 9 58·93	24 13 1·2	36·24
2	18 12 26·94	24 9 23·8	37·69
3	18 14 54·68	24 5 37·7	39·13
4	18 17 22·15	24 1 42·9	40·56
5	18 19 49·34	23 57 39·5	41·98
6	18 22 16·25	23 53 27·6	43·39
7	18 24 42·87	23 49 7·2	44·79
8	18 27 9·20	23 44 38·4	46·19
9	18 29 35·24	23 40 1·2	47·57
10	18 32 0·99	23 35 15·7	48·95
11	18 34 26·44	23 30 22·0	50·31
12	18 36 51·58	23 25 20·1	51·67
13	18 39 16·41	23 20 10·1	53·01
14	18 41 40·94	23 14 52·1	54·34
15	18 44 5·15	23 9 26·1	55·65
16	18 46 29·04	23 3 52·1	56·96
17	18 48 52·62	22 58 10·3	58·26
18	18 51 15·88	22 52 20·8	59·54
19	18 53 38·81	22 46 23·6	60·81
20	18 56 1·41	22 40 18·7	62·07
21	18 58 23·69	22 34 6·2	63·32
22	19 0 45·64	22 27 46·3	64·55
23	19 3 7·25	22 21 19·0	65·78
24	19 5 28·53	S. 22 14 44·3	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 13.				*SUNDAY* 15.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	19 5 28·53	S. 22 14 44·3	66·99	0	20 51 47·50	S. 14 58 53·0	110·83
1	19 7 49·47	22 8 2·4	68·19	1	20 53 52·34	14 47 48·1	111·45
2	19 10 10·08	22 1 13·2	69·38	2	20 55 56·88	14 36 39·4	112·05
3	19 12 30·35	21 54 16·9	70·56	3	20 58 1·12	14 25 27·0	112·65
4	19 14 50·27	21 47 13·5	71·73	4	21 0 5·07	14 14 11·1	113·23
5	19 17 9·85	21 40 3·2	72·88	5	21 2 8·73	14 2 51·7	113·80
6	19 19 29·09	21 32 45·9	74·02	6	21 4 12·10	13 51 28·9	114·36
7	19 21 47·98	21 25 21·8	75·14	7	21 6 15·18	13 40 2·8	114·91
8	19 24 6·53	21 17 50·9	76·26	8	21 8 17·99	13 28 33·3	115·45
9	19 26 24·74	21 10 13·3	77·36	9	21 10 20·51	13 17 0·6	115·98
10	19 28 42·59	21 2 29·1	78·45	10	21 12 22·76	13 5 24·7	116·50
11	19 31 0·10	20 54 38·4	79·53	11	21 14 24·73	12 53 45·7	117·00
12	19 33 17·26	20 46 41·2	80·61	12	21 16 26·43	12 42 3·7	117·50
13	19 35 34·07	20 38 37·6	81·66	13	21 18 27·87	12 30 18·7	117·98
14	19 37 50·53	20 30 27·6	82·71	14	21 20 29·04	12 18 30·8	118·46
15	19 40 6·64	20 22 11·3	83·73	15	21 22 29·95	12 6 40·1	118·92
16	19 42 22·41	20 13 48·9	84·75	16	21 24 30·60	11 54 46·6	119·37
17	19 44 37·82	20 5 20·4	85·76	17	21 26 31·00	11 42 50·4	119·81
18	19 46 52·89	19 56 45·9	86·75	18	21 28 31·14	11 30 51·5	120·24
19	19 49 7·61	19 48 5·4	87·73	19	21 30 31·04	11 18 50·1	120·66
20	19 51 21·98	19 39 19·0	88·69	20	21 32 30·69	11 6 46·1	121·07
21	19 53 36·00	19 30 26·8	89·65	21	21 34 30·10	10 54 39·7	121·47
22	19 55 49·68	19 21 28·9	90·59	22	21 36 29·27	10 42 30·9	121·85
23	19 58 3·01	S. 19 12 25·4	91·52	23	21 38 28·21	S. 10 30 19·8	122·23
	SATURDAY 14.				*MONDAY* 16.		
0	20 0 15·99	S. 19 3 16·3	92·44	0	21 40 26·91	S. 10 18 6·4	122·60
1	20 2 28·63	18 54 1·7	93·35	1	21 42 25·38	10 5 50·8	122·96
2	20 4 40·93	18 44 41·6	94·24	2	21 44 23·63	9 53 33·1	123·30
3	20 6 52·89	18 35 16·1	95·12	3	21 46 21·65	9 41 13·2	123·64
4	20 9 4·50	18 25 45·4	95·99	4	21 48 19·45	9 28 51·4	123·97
5	20 11 15·77	18 16 9·5	96·84	5	21 50 17·04	9 16 27·6	124·28
6	20 13 26·71	18 6 28·4	97·68	6	21 52 14·41	9 4 1·9	124·59
7	20 15 37·31	17 56 42·3	98·51	7	21 54 11·58	8 51 34·3	124·89
8	20 17 47·57	17 46 51·2	99·33	8	21 56 8·54	8 39 5·0	125·17
9	20 19 57·50	17 36 55·1	100·14	9	21 58 5·30	8 26 33·9	125·45
10	20 22 7·10	17 26 54·2	100·93	10	22 0 1·86	8 14 1·2	125·72
11	20 24 16·36	17 16 48·5	101·72	11	22 1 58·22	8 1 26·9	125·97
12	20 26 25·29	17 6 38·2	102·50	12	22 3 54·39	7 48 51·1	126·22
13	20 28 33·90	16 56 23·2	103·26	13	22 5 50·37	7 36 13·8	126·46
14	20 30 42·18	16 46 3·6	104·01	14	22 7 46·17	7 23 35·0	126·69
15	20 32 50·13	16 35 39·5	104·75	15	22 9 41·79	7 10 54·9	126·91
16	20 34 57·76	16 25 11·0	105·47	16	22 11 37·23	6 58 13·5	127·12
17	20 37 5·08	16 14 38·2	106·18	17	22 13 32·49	6 45 30·8	127·32
18	20 39 12·08	16 4 1·1	106·88	18	22 15 27·58	6 32 46·9	127·51
19	20 41 18·76	15 53 19·8	107·57	19	22 17 22·50	6 20 1·8	127·69
20	20 43 25·13	15 42 34·4	108·24	20	22 19 17·26	6 7 15·7	127·86
21	20 45 31·18	15 31 45·0	108·91	21	22 21 11·86	5 54 28·6	128·02
22	20 47 36·92	15 20 51·6	109·56	22	22 23 6·30	5 41 40·4	128·18
23	20 49 42·36	15 9 54·2	110·20	23	22 25 0·59	5 28 51·4	128·32
24	20 51 47·50	S. 14 58 53·0		24	22 26 54·72	S. 5 16 1·5	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 17.				*THURSDAY* 19.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	22 26 54·72	S. 5 16 1·5	128·45	0	23 56 24·55	N. 4 59 49·6	124·92
1	22 28 48·71	5 3 10·8	128·58	1	23 58 15·54	5 12 19·1	124·65
2	22 30 42·56	4 50 19·3	128·69	2	0 0 6·54	5 24 47·0	124·38
3	22 32 36·27	4 37 27·2	128·80	3	0 1 57·57	5 37 13·3	124·09
4	22 34 29·84	4 24 34·4	128·90	4	0 3 48·62	5 49 37·9	123·80
5	22 36 23·27	4 11 41·0	128·99	5	0 5 39·69	6 2 0·7	123·50
6	22 38 16·58	3 58 47·0	129·07	6	0 7 30·80	6 14 21·7	123·20
7	22 40 9·77	3 45 52·6	129·14	7	0 9 21·94	6 26 40·9	122·88
8	22 42 2·83	3 32 57·7	129·21	8	0 11 13·12	6 38 58·2	122·56
9	22 43 55·77	3 20 2·5	129·26	9	0 13 4·34	6 51 13·6	122·23
10	22 45 48·59	3 7 6·9	129·31	10	0 14 55·60	7 3 27·0	121·90
11	22 47 41·31	2 54 11·0	129·35	11	0 16 46·91	7 15 38·3	121·55
12	22 49 33·91	2 41 14·9	129·37	12	0 18 38·26	7 27 47·6	121·19
13	22 51 26·41	2 28 18·7	129·39	13	0 20 29·67	7 39 54·8	120·83
14	22 53 18·81	2 15 22·3	129·40	14	0 22 21·13	7 51 59·8	120·47
15	22 55 11·12	2 2 25·9	129·41	15	0 24 12·65	8 4 2·6	120·09
16	22 57 3·33	1 49 29·4	129·40	16	0 26 4·23	8 16 3·1	119·71
17	22 58 55·45	1 36 33·0	129·39	17	0 27 55·87	8 28 1·4	119·33
18	23 0 47·48	1 23 36·7	129·37	18	0 29 47·58	8 39 57·4	118·93
19	23 2 39·43	1 10 40·5	129·34	19	0 31 39·35	8 51 51·0	118·53
20	23 4 31·29	0 57 44·5	129·30	20	0 33 31·20	9 3 42·1	118·12
21	23 6 23·08	0 44 48·7	129·25	21	0 35 23·12	9 15 30·8	117·70
22	23 8 14·80	0 31 53·2	129·19	22	0 37 15·12	9 27 17·0	117·28
23	23 10 6·44	S. 0 18 58·0	129·13	23	0 39 7·19	N. 9 39 0·7	116·86
	WEDNESDAY 18.				*FRIDAY* 20.		
0	23 11 58·02	S. 0 6 3·2	129·06	0	0 40 59·35	N. 9 50 41·8	116·41
1	23 13 49·53	N. 0 6 51·2	128·98	1	0 42 51·60	10 2 20·3	115·96
2	23 15 40·99	0 19 45·1	128·89	2	0 44 43·93	10 13 56·1	115·51
3	23 17 32·39	0 32 38·4	128·79	3	0 46 36·35	10 25 29·1	115·05
4	23 19 23·73	0 45 31·1	128·69	4	0 48 28·87	10 36 59·4	114·58
5	23 21 15·02	0 58 23·2	128·57	5	0 50 21·48	10 48 26·9	114·10
6	23 23 6·27	1 11 14·7	128·45	6	0 52 14·19	10 59 51·5	113·62
7	23 24 57·48	1 24 5·4	128·32	7	0 54 7·00	11 11 13·2	113·13
8	23 26 48·64	1 36 55·3	128·18	8	0 55 59·91	11 22 32·0	112·64
9	23 28 39·77	1 49 44·4	128·04	9	0 57 52·93	11 33 47·8	112·13
10	23 30 30·86	2 2 32·6	127·88	10	0 59 46·05	11 45 0·6	111·62
11	23 32 21·93	2 15 19·9	127·72	11	1 1 39·29	11 56 10·3	111·10
12	23 34 12·97	2 28 6·2	127·55	12	1 3 32·64	12 7 16·9	110·58
13	23 36 3·99	2 40 51·5	127·37	13	1 5 26·11	12 18 20·4	110·04
14	23 37 54·98	2 53 35·7	127·19	14	1 7 19·69	12 29 20·7	109·50
15	23 39 45·96	3 6 18·9	126·99	15	1 9 13·40	12 40 17·7	108·96
16	23 41 36·93	3 19 0·8	126·79	16	1 11 7·22	12 51 11·4	108·40
17	23 43 27·88	3 31 41·6	126·59	17	1 13 1·17	13 2 1·8	107·84
18	23 45 18·83	3 44 21·1	126·37	18	1 14 55·25	13 12 48·9	107·28
19	23 47 9·77	3 56 59·4	126·15	19	1 16 49·46	13 23 32·6	106·70
20	23 49 0·72	4 9 36·3	125·92	20	1 18 43·80	13 34 12·8	106·12
21	23 50 51·66	4 22 11·8	125·68	21	1 20 38·27	13 44 49·5	105·53
22	23 52 42·62	4 34 45·9	125·43	22	1 22 32·88	13 55 22·7	104·94
23	23 54 33·58	4 47 18·5	125·18	23	1 24 27·62	14 5 52·3	104·33
24	23 56 24·55	N. 4 59 49·6		24	1 26 22·51	N. 14 16 18·3	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 21.				*MONDAY 23.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	1 26 22·51	N.14 16 18·3	103·72	0	3 1 33·23	N.21 12 40·4	66·39
1	1 28 17·54	14 26 40·7	103·11	1	3 3 36·73	21 19 18·8	65·45
2	1 30 12·71	14 36 59·3	102·48	2	3 5 40·42	21 25 51·5	64·51
3	1 32 8·03	14 47 14·2	101·85	3	3 7 44·30	21 32 18·5	63·56
4	1 34 3·50	14 57 25·3	101·21	4	3 9 48·38	21 38 39·8	62·60
5	1 35 59·12	15 7 32·6	100·57	5	3 11 52·64	21 44 55·4	61·63
6	1 37 54·89	15 17 36·0	99·92	6	3 13 57·10	21 51 5·2	60·66
7	1 39 50·81	15 27 35·5	99·26	7	3 16 1·74	21 57 9·2	59·68
8	1 41 46·89	15 37 31·1	98·59	8	3 18 6·58	22 3 7·3	58·70
9	1 43 43·13	15 47 22·7	97·92	9	3 20 11·61	22 8 59·5	57·71
10	1 45 39·52	15 57 10·3	97·24	10	3 22 16·82	22 14 45·8	56·72
11	1 47 36·08	16 6 53·7	96·55	11	3 24 22·23	22 20 26·1	55·72
12	1 49 32·79	16 16 33·0	95·86	12	3 26 27·82	22 26 0·4	54·71
13	1 51 29·67	16 26 8·2	95·16	13	3 28 33·60	22 31 28·7	53·70
14	1 53 26·72	16 35 39·2	94·46	14	3 30 39·57	22 36 50·8	52·68
15	1 55 23·93	16 45 5·9	93·74	15	3 32 45·72	22 42 6·9	51·65
16	1 57 21·31	16 54 28·3	93·02	16	3 34 52·06	22 47 16·8	50·62
17	1 59 18·87	17 3 46·4	92·29	17	3 36 58·58	22 52 20·6	49·59
18	2 1 16·59	17 13 0·2	91·56	18	3 39 5·28	22 57 18·1	48·55
19	2 3 14·49	17 22 9·6	90·81	19	3 41 12·16	23 2 9·4	47·50
20	2 5 12·56	17 31 14·5	90·06	20	3 43 19·23	23 6 54·4	46·45
21	2 7 10·80	17 40 14·8	89·31	21	3 45 26·47	23 11 33·1	45·39
22	2 9 9·23	17 49 10·7	88·55	22	3 47 33·89	23 16 5·4	44·32
23	2 11 7·82	N.17 58 2·0	87·78	23	3 49 41·49	N.23 20 31·3	43·25
	SUNDAY 22.				*TUESDAY 24.*		
0	2 13 6·60	N.18 6 48·6	87·00	0	3 51 49·27	N.23 24 50·8	42·18
1	2 15 5·56	18 15 30·6	86·22	1	3 53 57·22	23 29 3·9	41·10
2	2 17 4·70	18 24 7·9	85·43	2	3 56 5·34	23 33 10·5	40·02
3	2 19 4·02	18 32 40·5	84·64	3	3 58 13·63	23 37 10·6	38·93
4	2 21 3·53	18 41 8·4	83·83	4	4 0 22·10	23 41 4·1	37·83
5	2 23 3·22	18 49 31·4	83·02	5	4 2 30·73	23 44 51·1	36·73
6	2 25 3·10	18 57 49·5	82·21	6	4 4 39·53	23 48 31·5	35·63
7	2 27 3·16	19 6 2·7	81·39	7	4 6 48·50	23 52 5·3	34·52
8	2 29 3·40	19 14 11·0	80·56	8	4 8 57·62	23 55 32·4	33·41
9	2 31 3·84	19 22 14·4	79·72	9	4 11 6·91	23 58 52·8	32·29
10	2 33 4·46	19 30 12·7	78·88	10	4 13 16·35	24 2 6·5	31·16
11	2 35 5·27	19 38 6·0	78·03	11	4 15 25·95	24 5 13·5	30·03
12	2 37 6·27	19 45 54·2	77·17	12	4 17 35·71	24 8 13·7	28·90
13	2 39 7·46	19 53 37·2	76·31	13	4 19 45·62	24 11 7·1	27·76
14	2 41 8·84	20 1 15·1	75·44	14	4 21 55·68	24 13 53·7	26·62
15	2 43 10·42	20 8 47·7	74·56	15	4 24 5·89	24 16 33·4	25·47
16	2 45 12·19	20 16 15·1	73·68	16	4 26 16·25	24 19 6·3	24·32
17	2 47 14·15	20 23 37·2	72·79	17	4 28 26·75	24 21 32·2	23·17
18	2 49 16·30	20 30 54·0	71·90	18	4 30 37·40	24 23 51·2	22·01
19	2 51 18·64	20 38 5·4	71·00	19	4 32 48·18	24 26 3·3	20·84
20	2 53 21·17	20 45 11·4	70·09	20	4 34 59·11	24 28 8·3	19·67
21	2 55 23·90	20 52 11·9	69·18	21	4 37 10·17	24 30 6·4	18·50
22	2 57 26·82	20 59 7·0	68·25	22	4 39 21·36	24 31 57·4	17·33
23	2 59 29·93	21 5 56·5	67·32	23	4 41 32·69	24 33 41·3	16·15
24	3 1 33·23	N.21 12 40·4		24	4 43 44·14	N.24 35 18·2	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 25.		
	h m s	° ′ ″	″
0	4 43 44·14	N.24 35 18·2	14·96
1	4 45 55·72	24 36 48·0	13·78
2	4 48 7·43	24 38 10·7	12·59
3	4 50 19·25	24 39 26·2	11·39
4	4 52 31·19	24 40 34·5	10·19
5	4 54 43·25	24 41 35·7	8·99
6	4 56 55·42	24 42 29·6	7·79
7	4 59 7·70	24 43 16·4	6·58
8	5 1 20·09	24 43 55·9	5·37
9	5 3 32·59	24 44 28·1	4·16
10	5 5 45·18	24 44 53·1	2·95
11	5 7 57·88	24 45 10·8	1·73
12	5 10 10·67	24 45 21·1	0·51
13	5 12 23·56	24 45 24·2	0·71
14	5 14 36·54	24 45 19·9	1·94
15	5 16 49·61	24 45 8·3	3·17
16	5 19 2·76	24 44 49·3	4·40
17	5 21 16·00	24 44 22·9	5·63
18	5 23 29·31	24 43 49·1	6·86
19	5 25 42·71	24 43 7·9	8·10
20	5 27 56·18	24 42 19·3	9·34
21	5 30 9·72	24 41 23·3	10·58
22	5 32 23·33	24 40 19·9	11·82
23	5 34 37·00	N.24 39 9·0	13·06
	THURSDAY 26.		
0	5 36 50·74	N.24 37 50·6	14·30
1	5 39 4·54	24 36 24·8	15·55
2	5 41 18·39	24 34 51·5	16·80
3	5 43 32·30	24 33 10·7	18·04
4	5 45 46·26	24 31 22·4	19·29
5	5 48 0·27	24 29 26·7	20·54
6	5 50 14·32	24 27 23·4	21·79
7	5 52 28·41	24 25 12·7	23·05
8	5 54 42·55	24 22 54·4	24·30
9	5 56 56·72	24 20 28·6	25·55
10	5 59 10·93	24 17 55·3	26·80
11	6 1 25·16	24 15 14·5	28·06
12	6 3 39·43	24 12 26·1	29·31
13	6 5 53·72	24 9 30·3	30·56
14	6 8 8·04	24 6 26·9	31·82
15	6 10 22·37	24 3 16·0	33·07
16	6 12 36·72	23 59 57·5	34·32
17	6 14 51·09	23 56 31·6	35·57
18	6 17 5·47	23 52 58·2	36·83
19	6 19 19·86	23 49 17·2	38·08
20	6 21 34·26	23 45 28·7	39·33
21	6 23 48·66	23 41 32·7	40·58
22	6 26 3·06	23 37 29·3	41·83
23	6 28 17·46	23 33 18·3	43·08
24	6 30 31·86	N.23 28 59·8	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 27.		
	h m s	° ′ ″	″
0	6 30 31·86	N.23 28 59·8	44·32
1	6 32 46·26	23 24 33·9	45·56
2	6 35 0·64	23 20 0·5	46·81
3	6 37 15·02	23 15 19·7	48·05
4	6 39 29·39	23 10 31·4	49·29
5	6 41 43·74	23 5 35·6	50·53
6	6 43 58·08	23 0 32·4	51·77
7	6 46 12·39	22 55 21·8	53·01
8	6 48 26·69	22 50 3·8	54·24
9	6 50 40·96	22 44 38·3	55·47
10	6 52 55·21	22 39 5·5	56·70
11	6 55 9·43	22 33 25·3	57·93
12	6 57 23·62	22 27 37·7	59·15
13	6 59 37·78	22 21 42·8	60·37
14	7 1 51·91	22 15 40·6	61·59
15	7 4 6·00	22 9 31·0	62·81
16	7 6 20·06	22 3 14·2	64·02
17	7 8 34·08	21 56 50·1	65·23
18	7 10 48·06	21 50 18·7	66·44
19	7 13 2·00	21 43 40·0	67·64
20	7 15 15·90	21 36 54·2	68·84
21	7 17 29·76	21 30 1·2	70·04
22	7 19 43·57	21 23 0·9	71·23
23	7 21 57·33	N.21 15 53·5	72·42
	SATURDAY 28.		
0	7 24 11·05	N.21 8 39·0	73·60
1	7 26 24·72	21 1 17·4	74·78
2	7 28 38·33	20 53 48·7	75·96
3	7 30 51·90	20 46 13·0	77·13
4	7 33 5·41	20 38 30·2	78·30
5	7 35 18·87	20 30 40·3	79·46
6	7 37 32·27	20 22 43·5	80·63
7	7 39 45·62	20 14 39·8	81·78
8	7 41 58·92	20 6 29·1	82·93
9	7 44 12·16	19 58 11·5	84·08
10	7 46 25·34	19 49 47·1	85·22
11	7 48 38·46	19 41 15·8	86·35
12	7 50 51·53	19 32 37·6	87·48
13	7 53 4·54	19 23 52·7	88·61
14	7 55 17·49	19 15 1·0	89·73
15	7 57 30·38	19 6 2·6	90·85
16	7 59 43·21	18 56 57·5	91·96
17	8 1 55·99	18 47 45·8	93·06
18	8 4 8·70	18 38 27·4	94·16
19	8 6 21·36	18 29 2·4	95·25
20	8 8 33·95	18 19 30·9	96·34
21	8 10 46·49	18 9 52·9	97·42
22	8 12 58·97	18 0 8·4	98·49
23	8 15 11·39	17 50 17·4	99·56
24	8 17 23·75	N.17 40 20·1	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SUNDAY 29.				*MONDAY* 30.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	8 17 23·75	N.17 40 20·1	100·61	0	9 10 4·71	N.13 11 15·4	123·82
1	8 19 36·05	17 30 16·4	101·66	1	9 12 15·89	12 58 52·5	124·68
2	8 21 48·29	17 20 6·5	102·71	2	9 14 27·04	12 46 24·4	125·53
3	8 24 0·48	17 9 50·2	103·75	3	9 16 38·16	12 33 51·2	126·38
4	8 26 12·61	16 59 27·7	104·79	4	9 18 49·26	12 21 12·9	127·21
5	8 28 24·68	16 48 59·0	105·81	5	9 21 0·33	12 8 29·6	128·04
6	8 30 36·70	16 38 24·1	106·83	6	9 23 11·39	11 55 41·4	128·85
7	8 32 48·66	16 27 43·1	107·84	7	9 25 22·43	11 42 48·3	129·65
8	8 35 0·57	16 16 56·0	108·85	8	9 27 33·45	11 29 50·4	130·44
9	8 37 12·43	16 6 2·9	109·85	9	9 29 44·45	11 16 47·8	131·23
10	8 39 24·23	15 55 3·8	110·84	10	9 31 55·45	11 3 40·4	132·00
11	8 41 35·99	15 43 58·8	111·82	11	9 34 6·44	10 50 28·4	132·76
12	8 43 47·69	15 32 47·9	112·79	12	9 36 17·42	10 37 11·9	133·50
13	8 45 59·34	15 21 31·2	113·76	13	9 38 28·39	10 23 50·9	134·25
14	8 48 10·95	15 10 8·7	114·71	14	9 40 39·37	10 10 25·4	134·98
15	8 50 22·51	14 58 40·4	115·66	15	9 42 50·34	9 56 55·5	135·69
16	8 52 34·03	14 47 6·4	116·60	16	9 45 1·32	9 43 21·4	136·40
17	8 54 45·50	14 35 26·7	117·54	17	9 47 12·30	9 29 43·0	137·09
18	8 56 56·93	14 23 41·5	118·46	18	9 49 23·29	9 16 0·4	137·77
19	8 59 8·32	14 11 50·7	119·38	19	9 51 34·29	9 2 13·8	138·45
20	9 1 19·67	13 59 54·4	120·28	20	9 53 45·31	8 48 23·1	139·10
21	9 3 30·98	13 47 52·7	121·18	21	9 55 56·34	8 34 28·4	139·75
22	9 5 42·26	13 35 45·6	122·07	22	9 58 7·39	8 20 29·9	140·39
23	9 7 53·50	13 23 33·2	122·96	23	10 0 18·47	8 6 27·6	141·01
24	9 10 4·71	N.13 11 15·4		24	10 2 29·57	N. 7 52 21·5	

PHASES OF THE MOON.

		d	h	m
●	New Moon	4	10	11·9
☽	*First Quarter*	11	1	15·9
○	Full Moon	18	14	1·4
☾	*Last Quarter*	26	18	24·1

		d	h
☾	Perigee	6	13
☾	Apogee	22	8

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LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		Noon.	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	α Arietis	W.	79 8 56	2582	80 48 15	2564	82 27 59	2548	84 8 6	2530
	Aldebaran	W.	46 46 6	2649	48 23 55	2627	50 2 14	2606	51 41 1	2585
	Sun	E.	44 28 24	2919	42 56 29	2902	41 24 13	2885	39 51 35	2869
2	α Arietis	W.	92 34 43	2446	94 17 13	2429	96 0 6	2412	97 43 23	2397
	Aldebaran	W.	60 1 56	2487	61 43 28	2469	63 25 25	2450	65 7 48	2433
	Pollux	W.	18 51 41	2778	20 26 37	2710	22 3 3	2652	23 40 48	2603
	Sun	E.	32 3 18	2793	30 28 41	2781	28 53 48	2769	27 18 39	2758
6	Sun	W.	22 14 41	2482	23 56 19	2470	25 38 14	2461	27 20 22	2454
	Antares	E.	62 4 0	2103	60 13 6	2103	58 22 11	2102	56 31 15	2102
	α Aquilæ	E.	113 36 19	2734	112 0 24	2716	110 24 6	2701	108 47 27	2688
7	Sun	W.	35 52 47	2441	37 35 23	2442	39 17 58	2443	41 0 31	2446
	Antares	E.	47 16 56	2112	45 26 15	2115	43 35 39	2120	41 45 10	2124
	α Aquilæ	E.	100 40 41	2650	99 2 54	2649	97 25 5	2647	95 47 14	2649
8	Sun	W.	49 31 57	2470	51 13 53	2477	52 55 39	2484	54 37 15	2491
	Venus	W.	18 20 5	2716	19 56 24	2694	21 33 12	2679	23 10 20	2670
	Spica	W.	13 27 48	2241	15 15 14	2231	17 2 56	2223	18 50 49	2220
	Antares	E.	32 34 45	2155	30 45 10	2163	28 55 47	2172	27 6 37	2181
	α Aquilæ	E.	87 38 58	2674	86 1 43	2683	84 24 40	2694	82 47 52	2706
	Fomalhaut	E.	112 56 28	2655	111 18 47	2649	109 40 59	2645	108 3 5	2643
9	Sun	W.	63 2 28	2535	64 42 53	2544	66 23 5	2555	68 3 2	2565
	Venus	W.	31 17 41	2665	32 55 8	2670	34 32 28	2675	36 9 42	2682
	Spica	W.	27 50 4	2238	29 37 35	2245	31 24 56	2253	33 12 5	2261
	α Aquilæ	E.	74 48 26	2786	73 13 40	2807	71 39 21	2828	70 5 30	2852
	Fomalhaut	E.	99 53 33	2653	98 15 50	2658	96 38 14	2665	95 0 47	2672
	α Pegasi	E.	121 17 51	2408	119 34 28	2411	117 51 9	2414	116 7 54	2419
10	Sun	W.	76 19 10	2620	77 57 38	2632	79 35 50	2643	81 13 46	2655
	Venus	W.	44 13 23	2723	45 49 33	2733	47 25 29	2742	49 1 13	2753
	Spica	W.	42 4 40	2307	43 50 30	2317	45 36 5	2328	47 21 24	2338
	α Aquilæ	E.	62 24 37	2998	60 54 21	3034	59 24 50	3071	57 56 5	3110
	Fomalhaut	E.	86 56 30	2725	85 20 23	2738	83 44 33	2751	82 9 1	2766
	α Pegasi	E.	107 33 38	2451	105 51 16	2459	104 9 5	2468	102 27 7	2477
11	Sun	W.	89 19 26	2716	90 55 45	2728	92 31 48	2740	94 7 35	2752
	Venus	W.	56 56 22	2808	58 30 40	2819	60 4 44	2831	61 38 32	2842
	Spica	W.	56 4 11	2391	57 47 58	2403	59 31 28	2414	61 14 43	2424
	α Aquilæ	E.	50 45 55	3368	49 23 2	3432	48 1 21	3501	46 40 58	3577
	Fomalhaut	E.	74 16 36	2853	72 43 17	2873	71 10 24	2895	69 37 59	2917
	α Pegasi	E.	94 0 34	2527	92 19 59	2538	90 39 38	2550	88 59 34	2561
12	Sun	W.	102 2 27	2814	103 36 37	2826	105 10 31	2838	106 44 10	2850
	Spica	W.	69 47 4	2480	71 28 46	2491	73 10 12	2502	74 51 23	2512
	Venus	W.	69 23 52	2900	70 56 11	2911	72 28 16	2923	74 0 6	2935
	Antares	W.	24 8 5	2485	25 49 40	2495	27 31 0	2505	29 12 7	2515
	Fomalhaut	E.	62 3 24	3047	60 34 10	3078	59 5 34	3110	57 37 37	3144
	α Pegasi	E.	80 43 12	2621	79 4 45	2634	77 26 37	2646	75 48 45	2660
13	Sun	W.	114 28 32	2909	116 0 39	2922	117 32 30	2933	119 4 7	2945
	Spica	W.	83 13 34	2565	84 53 17	2576	86 32 45	2586	88 11 59	2596

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Day of the Month.	Star's Name and Position.		*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	α Arietis	W.	85 48 38	2513	87 29 33	2495	89 10 53	2479	90 52 36	2462
	Aldebaran	W.	53 20 17	2564	55 0 1	2544	56 40 13	2525	58 20 51	2506
	Sun	E.	38 18 36	2852	36 45 16	2837	35 11 36	2822	33 37 36	2808
2	α Arietis	W.	99 27 2	2381	101 11 4	2366	102 55 27	2351	104 40 12	2337
	Aldebaran	W.	66 50 36	2416	68 33 48	2399	70 17 24	2382	72 1 24	2366
	Pollux	W.	25 19 39	2560	26 59 29	2522	28 40 11	2488	30 21 41	2458
	Sun	E.	25 43 16	2750	24 7 42	2743	22 31 59	2739	20 56 11	2738
6	Sun	W.	29 2 40	2448	30 45 6	2445	32 27 37	2443	34 10 11	2441
	Antares	E.	54 40 19	2103	52 49 24	2105	50 58 32	2106	49 7 42	2109
	α Aquilæ	E.	107 10 31	2676	105 33 19	2668	103 55 56	2660	102 18 22	2654
7	Sun	W.	42 43 0	2450	44 25 24	2454	46 7 42	2459	47 49 53	2464
	Antares	E.	39 54 47	2130	38 4 33	2135	36 14 27	2141	34 24 31	2148
	α Aquilæ	E.	94 9 25	2651	92 31 39	2654	90 53 57	2660	89 16 23	2666
8	Sun	W.	56 18 41	2499	57 59 56	2507	59 40 59	2516	61 21 50	2525
	Venus	W.	24 47 40	2664	26 25 8	2662	28 2 39	2661	29 40 11	2663
	Spica	W.	20 38 46	2220	22 26 43	2223	24 14 37	2227	26 2 24	2232
	Antares	E.	25 17 40	2190	23 28 57	2200	21 40 30	2212	19 52 20	2223
	α Aquilæ	E.	81 11 20	2719	79 35 5	2734	77 59 10	2750	76 23 37	2767
	Fomalhaut	E.	106 25 9	2643	104 47 12	2643	103 9 15	2646	101 31 22	2649
9	Sun	W.	69 42 46	2576	71 22 14	2586	73 1 28	2597	74 40 27	2609
	Venus	W.	37 46 46	2688	39 23 42	2696	41 0 27	2705	42 37 1	2714
	Spica	W.	34 59 2	2269	36 45 47	2278	38 32 19	2287	40 18 37	2298
	α Aquilæ	E.	68 32 10	2878	66 59 23	2905	65 27 10	2934	63 55 34	2965
	Fomalhaut	E.	93 23 30	2681	91 46 25	2690	90 9 32	2701	88 32 54	2712
	α Pegasi	E.	114 24 47	2424	112 41 46	2430	110 58 54	2436	109 16 11	2443
10	Sun	W.	82 51 26	2667	84 28 50	2679	86 5 58	2691	87 42 50	2703
	Venus	W.	50 36 43	2763	52 11 59	2774	53 47 1	2785	55 21 49	2796
	Spica	W.	49 6 28	2348	50 51 17	2359	52 35 51	2370	54 20 9	2381
	α Aquilæ	E.	56 28 10	3156	55 1 8	3203	53 35 3	3253	52 9 57	3308
	Fomalhaut	E.	80 33 49	2782	78 58 57	2798	77 24 27	2816	75 50 20	2834
	α Pegasi	E.	100 45 21	2486	99 3 49	2495	97 22 29	2506	95 41 24	2517
11	Sun	W.	95 43 6	2765	97 18 20	2777	98 53 18	2789	100 28 0	2801
	Venus	W.	63 12 6	2853	64 45 25	2865	66 18 29	2876	67 51 18	2888
	Spica	W.	62 57 43	2436	64 40 26	2447	66 22 54	2458	68 5 7	2469
	α Aquilæ	E.	45 21 59	3660	44 4 30	3750	42 48 36	3850	41 34 26	3961
	Fomalhaut	E.	68 6 2	2940	66 34 34	2965	65 3 38	2991	63 33 14	3018
	α Pegasi	E.	87 19 45	2572	85 40 12	2584	84 0 55	2596	82 21 55	2609
12	Sun	W.	108 17 33	2862	109 50 41	2874	111 23 33	2886	112 56 10	2898
	Spica	W.	76 32 19	2523	78 13 0	2534	79 53 26	2545	81 33 37	2555
	Venus	W.	75 31 41	2946	77 3 2	2957	78 34 8	2969	80 5 0	2980
	Antares	W.	30 53 0	2525	32 33 39	2535	34 14 4	2545	35 54 15	2555
	Fomalhaut	E.	56 10 21	3182	54 43 50	3221	53 18 5	3262	51 53 9	3306
	α Pegasi	E.	74 11 12	2673	72 33 56	2687	70 56 59	2701	69 20 21	2715
13	Sun	W.	120 35 29	2956	122 6 37	2969	123 37 29	2980	125 8 7	2991
	Spica	W.	89 50 59	2606	91 29 46	2617	93 8 18	2627	94 46 37	2636

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
13	Venus W.	81 35 38	2991	83 6 2	3002	84 36 12	3014	86 6 8	3025
	Antares W.	37 34 12	2565	39 13 55	2575	40 53 24	2585	42 32 40	2595
	Fomalhaut E.	50 29 5	3354	49 5 56	3406	47 43 46	3462	46 22 39	3522
	α Pegasi E.	67 44 1	2730	66 8 1	2745	64 32 21	2760	62 57 0	2776
	α Arietis E.	110 13 35	2581	108 34 14	2591	106 55 7	2601	105 16 13	2611
14	Sun W.	126 38 31	3002	128 8 41	3014	129 38 36	3026	131 8 16	3037
	Spica W.	96 24 43	2646	98 2 35	2656	99 40 14	2665	101 17 41	2675
	Venus W.	93 32 26	3078	95 1 2	3089	96 29 25	3099	97 57 36	3110
	Antares W.	50 45 35	2643	52 23 31	2653	54 1 14	2663	55 38 44	2672
	Fomalhaut E.	39 55 36	3919	38 42 36	4024	37 31 20	4141	36 21 58	4271
	α Pegasi E.	55 5 37	2862	53 32 29	2881	51 59 45	2901	50 27 27	2922
	α Arietis E.	97 5 6	2660	95 27 32	2669	93 50 10	2679	92 13 2	2688
15	Venus W.	105 15 21	3160	106 42 18	3171	108 9 2	3180	109 35 35	3190
	Antares W.	63 43 8	2717	65 19 25	2726	66 55 30	2735	68 31 23	2744
	α Pegasi E.	42 53 8	3047	41 23 54	3078	39 55 18	3112	38 27 23	3149
	α Arietis E.	84 10 27	2734	82 34 33	2743	80 58 50	2753	79 23 20	2762
	Aldebaran E.	116 45 52	2770	115 10 45	2778	113 35 49	2785	112 1 2	2794
16	Antares W.	76 27 57	2786	78 2 43	2795	79 37 18	2803	81 11 42	2811
	α Arietis E.	71 28 46	2806	69 54 26	2815	68 20 17	2824	66 46 20	2832
	Aldebaran E.	104 9 38	2831	102 35 51	2839	101 2 14	2847	99 28 47	2855
17	Antares W.	89 1 3	2851	90 34 25	2859	92 7 36	2866	93 40 38	2875
	α Aquilæ W.	42 52 12	4159	44 1 17	4094	45 11 25	4036	46 22 29	3983
	α Arietis E.	58 59 22	2876	57 26 33	2884	55 53 54	2894	54 21 27	2902
	Aldebaran E.	91 44 2	2894	90 11 35	2901	88 39 18	2909	87 7 10	2917
18	Antares W.	101 23 19	2912	102 55 23	2920	104 27 17	2927	105 59 2	2933
	α Aquilæ W.	52 29 12	3794	53 44 21	3767	54 59 58	3743	56 16 0	3720
	Fomalhaut W.	30 41 46	5304	31 34 50	5103	32 30 25	4928	33 28 17	4775
	α Arietis E.	46 42 1	2948	45 10 43	2957	43 39 36	2966	42 8 41	2976
	Aldebaran E.	79 29 1	2956	77 57 53	2964	76 26 55	2971	74 56 6	2979
	Pollux E.	121 23 25	2961	119 52 23	2967	118 21 29	2973	116 50 42	2979
19	Antares W.	113 35 36	2968	115 6 29	2974	116 37 14	2981	118 7 51	2988
	α Aquilæ W.	62 41 15	3642	63 59 4	3630	65 17 6	3621	66 35 18	3612
	Fomalhaut W.	38 45 9	4245	39 52 53	4172	41 1 46	4106	42 11 42	4048
	α Arietis E.	34 37 14	3029	33 7 37	3041	31 38 15	3053	30 9 8	3067
	Aldebaran E.	67 24 26	3018	65 54 35	3026	64 24 54	3033	62 55 22	3040
	Pollux E.	109 18 38	3008	107 48 35	3013	106 18 39	3019	104 48 50	3026
20	α Aquilæ W.	73 8 11	3585	74 27 2	3582	75 45 56	3580	77 4 52	3578
	Fomalhaut W.	48 13 47	3836	49 28 12	3806	50 43 8	3778	51 58 33	3753
	α Pegasi W.	25 35 42	3878	26 49 24	3798	28 4 28	3730	29 20 43	3673
	Aldebaran E.	55 30 5	3080	54 1 31	3087	52 33 6	3095	51 4 50	3104
	Pollux E.	97 21 31	3052	95 52 23	3058	94 23 22	3063	92 54 27	3068
21	α Aquilæ W.	83 39 49	3578	84 58 47	3579	86 17 45	3581	87 36 40	3583
	Fomalhaut W.	58 21 30	3658	59 39 2	3644	60 56 49	3630	62 14 51	3618
	α Pegasi W.	35 54 54	3482	37 15 38	3457	38 36 50	3436	39 58 26	3417
	Aldebaran E.	43 46 5	3147	42 18 52	3155	40 51 49	3165	39 24 58	3176
	Pollux E.	85 31 19	3091	84 2 58	3094	82 34 41	3098	81 6 29	3102

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
13	Venus W.	87 35 50	3035	89 5 19	3046	90 34 35	3057	92 3 37	3068
	Antares W.	44 11 42	2605	45 50 30	2615	47 29 5	2624	49 7 27	2634
	Fomalhaut E.	45 2 39	3588	43 43 51	3660	42 26 21	3738	41 10 14	3824
	α Pegasi E.	61 22 0	2792	59 47 21	2808	58 13 4	2825	56 39 9	2843
	α Arietis E.	103 37 33	2621	101 59 6	2631	100 20 53	2641	98 42 53	2650
14	Sun W.	132 37 43	3049	134 6 55	3061	135 35 53	3073	137 4 36	3084
	Spica W.	102 54 55	2684	104 31 56	2694	106 8 44	2703	107 45 20	2712
	Venus W.	99 25 34	3120	100 53 19	3130	102 20 52	3140	103 48 13	3151
	Antares W.	57 16 1	2681	58 53 7	2691	60 29 59	2699	62 6 40	2709
	Fomalhaut E.	35 14 39	4418	34 9 34	4583	33 6 55	4769	32 6 53	4981
	α Pegasi E.	48 55 36	2944	47 24 12	2968	45 53 19	2993	44 22 57	3019
	α Arietis E.	90 36 6	2698	88 59 23	2707	87 22 52	2716	85 46 33	2725
15	Venus W.	111 1 56	3199	112 28 6	3210	113 54 3	3219	115 19 50	3229
	Antares W.	70 7 4	2753	71 42 34	2761	73 17 53	2769	74 53 1	2778
	α Pegasi E.	37 0 13	3189	35 33 50	3233	34 8 20	3282	32 43 47	3337
	α Arietis E.	77 48 2	2771	76 12 56	2779	74 38 1	2788	73 3 18	2797
	Aldebaran E.	110 26 26	2801	108 51 59	2808	107 17 42	2816	105 43 35	2824
16	Antares W.	82 45 55	2819	84 19 58	2828	85 53 50	2835	87 27 32	2844
	α Arietis E.	65 12 34	2841	63 38 59	2849	62 5 35	2859	60 32 23	2867
	Aldebaran E.	97 55 30	2862	96 22 23	2870	94 49 26	2878	93 16 39	2886
17	Antares W.	95 13 29	2882	96 46 11	2890	98 18 43	2897	99 51 6	2905
	α Aquilæ W.	47 34 25	3937	48 47 7	3895	50 0 32	3858	51 14 35	3824
	α Arietis E.	52 49 11	2912	51 17 7	2920	49 45 13	2930	48 13 32	2938
	Aldebaran E.	85 35 13	2924	84 3 25	2933	82 31 48	2940	81 0 20	2947
18	Antares W.	107 30 39	2941	109 2 6	2947	110 33 25	2954	112 4 35	2961
	α Aquilæ W.	57 32 26	3701	58 49 12	3683	60 6 17	3667	61 23 39	3654
	Fomalhaut W.	34 28 14	4641	35 30 4	4523	36 33 36	4419	37 38 40	4326
	α Arietis E.	40 37 58	2986	39 7 28	2996	37 37 10	3006	36 7 5	3017
	Aldebaran E.	73 25 27	2986	71 54 57	2994	70 24 37	3002	68 54 27	3010
	Pollux E.	115 20 3	2985	113 49 31	2990	112 19 6	2996	110 48 48	3002
19	Antares W.	119 38 19	2993	121 8 41	3000	122 38 54	3006	124 9 0	3011
	α Aquilæ W.	67 53 39	3605	69 12 8	3599	70 30 43	3593	71 49 25	3589
	Fomalhaut W.	43 22 34	3996	44 34 17	3950	45 46 46	3908	46 59 57	3870
	α Arietis E.	28 40 18	3081	27 11 45	3097	25 43 32	3115	24 15 40	3134
	Aldebaran E.	61 25 59	3048	59 56 46	3056	58 27 43	3064	56 58 49	3072
	Pollux E.	103 19 9	3031	101 49 34	3036	100 20 6	3042	98 50 45	3047
20	α Aquilæ W.	78 23 50	3577	79 42 49	3577	81 1 49	3577	82 20 49	3577
	Fomalhaut W.	53 14 24	3730	54 30 40	3709	55 47 17	3691	57 4 14	3673
	α Pegasi W.	30 37 59	3623	31 56 9	3580	33 15 5	3543	34 34 42	3511
	Aldebaran E.	49 36 45	3112	48 8 50	3119	46 41 4	3128	45 13 29	3138
	Pollux E.	91 25 38	3073	89 56 55	3077	88 28 17	3082	86 59 46	3086
21	α Aquilæ W.	88 55 33	3586	90 14 23	3588	91 33 10	3591	92 51 54	3595
	Fomalhaut W.	63 33 6	3608	64 51 32	3597	66 10 10	3588	67 28 57	3579
	α Pegasi W.	41 20 23	3399	42 42 41	3384	44 5 16	3370	45 28 7	3358
	Aldebaran E.	37 58 20	3187	36 31 55	3198	35 5 43	3210	33 39 46	3224
	Pollux E.	79 38 22	3105	78 10 19	3109	76 42 20	3111	75 14 24	3115

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
22	α Aquilæ W.	94 10 34	3599	95 29 10	3603	96 47 41	3608	98 6 7	3612
	Fomalhaut W.	68 47 54	3571	70 7 0	3564	71 26 14	3556	72 45 36	3550
	α Pegasi W.	46 51 12	3346	48 14 31	3335	49 38 2	3325	51 1 44	3316
	Aldebaran E.	32 14 5	3238	30 48 41	3255	29 23 37	3274	27 58 55	3295
	Pollux E.	73 46 33	3117	72 18 44	3119	70 50 58	3122	69 23 15	3124
23	α Aquilæ W.	104 36 51	3642	105 54 40	3649	107 12 21	3658	108 29 53	3666
	Fomalhaut W.	79 24 3	3523	80 44 2	3518	82 4 6	3514	83 24 15	3510
	α Pegasi W.	58 2 43	3277	59 27 21	3270	60 52 8	3264	62 17 2	3257
	Pollux E.	62 5 8	3130	60 37 35	3130	59 10 2	3130	57 42 29	3131
	Regulus E.	98 52 3	3091	97 23 42	3090	95 55 20	3088	94 26 56	3087
	Sun E.	131 18 48	3485	129 58 7	3482	128 37 23	3480	127 16 37	3477
24	α Aquilæ W.	114 55 7	3718	116 11 35	3731	117 27 50	3745	118 43 50	3759
	Fomalhaut W.	90 6 6	3490	91 26 41	3487	92 47 20	3483	94 8 3	3480
	α Pegasi W.	69 23 32	3222	70 49 15	3216	72 15 5	3209	73 41 4	3201
	α Arietis W.	25 48 38	3161	27 15 34	3147	28 42 47	3134	30 10 15	3122
	Pollux E.	50 24 44	3128	48 57 8	3128	47 29 32	3126	46 1 54	3125
	Regulus E.	87 4 17	3072	85 35 33	3069	84 6 45	3064	82 37 51	3059
	Sun E.	120 31 51	3458	119 10 40	3453	117 49 24	3447	116 28 1	3442
25	Fomalhaut W.	100 52 28	3466	102 13 30	3463	103 34 35	3461	104 55 43	3460
	α Pegasi W.	80 53 16	3162	82 20 11	3153	83 47 16	3144	85 14 32	3135
	α Arietis W.	37 31 4	3067	38 59 54	3056	40 28 57	3045	41 58 14	3035
	Pollux E.	38 43 26	3120	37 15 41	3121	35 47 57	3121	34 20 13	3123
	Regulus E.	75 11 41	3029	73 42 4	3021	72 12 17	3013	70 42 21	3005
	Sun E.	109 39 21	3407	108 17 12	3398	106 54 53	3389	105 32 24	3380
26	Fomalhaut W.	111 41 43	3455	113 2 57	3456	114 24 10	3458	115 45 21	3460
	α Pegasi W.	92 33 43	3086	94 2 9	3075	95 30 49	3065	96 59 41	3054
	α Arietis W.	49 28 5	2977	50 58 47	2964	52 29 45	2951	54 0 59	2938
	Aldebaran W.	18 9 24	3402	19 31 38	3327	20 55 19	3264	22 20 13	3210
	Regulus E.	63 9 57	2958	61 38 52	2948	60 7 34	2936	58 36 1	2926
	Sun E.	98 37 9	3326	97 13 28	3314	95 49 33	3302	94 25 24	3289
27	α Pegasi W.	104 27 29	2997	105 57 46	2985	107 28 17	2973	108 59 4	2961
	α Arietis W.	61 41 24	2869	63 14 23	2853	64 47 42	2838	66 21 20	2822
	Aldebaran W.	29 38 26	3019	31 8 15	2989	32 38 41	2961	34 9 42	2935
	Regulus E.	50 54 36	2863	49 21 30	2851	47 48 8	2837	46 14 28	2823
	Sun E.	87 20 41	3218	85 54 53	3203	84 28 47	3187	83 2 22	3171
28	α Arietis W.	74 14 44	2741	75 50 30	2723	77 26 39	2706	79 3 11	2688
	Aldebaran W.	41 52 48	2815	43 26 56	2793	45 1 33	2771	46 36 39	2749
	Regulus E.	38 21 32	2752	36 46 1	2738	35 10 11	2723	33 34 1	2709
	Sun E.	75 45 19	3085	74 16 51	3067	72 48 1	3049	71 18 49	3030
29	α Arietis W.	87 11 53	2598	88 50 51	2579	90 30 15	2560	92 10 5	2541
	Aldebaran W.	54 39 21	2643	56 17 18	2621	57 55 45	2600	59 34 40	2580
	Sun E.	63 46 58	2935	62 15 23	2916	60 43 24	2897	59 11 1	2877
30	α Arietis W.	100 35 44	2448	102 18 11	2430	104 1 3	2411	105 44 22	2393
	Aldebaran W.	67 56 20	2477	69 38 5	2457	71 20 18	2438	73 2 59	2418
	Pollux W.	26 27 26	2621	28 5 52	2582	29 45 12	2546	31 25 21	2512
	Sun E.	51 22 47	2780	49 47 53	2761	48 12 34	2743	46 36 51	2725

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
22	α Aquilæ W.	99 24 28	3618	100 42 43	3623	102 0 53	3630	103 18 55	3636
	Fomalhaut W.	74 5 5	3544	75 24 40	3538	76 44 22	3533	78 4 10	3528
	α Pegasi W.	52 25 37	3307	53 49 40	3300	55 13 52	3292	56 38 13	3284
	Aldebaran E.	26 34 37	3318	25 10 47	3346	23 47 29	3380	22 24 50	3420
	Pollux E.	67 55 34	3125	66 27 55	3127	65 0 18	3128	63 32 42	3129
23	α Aquilæ W.	109 47 16	3675	111 4 30	3684	112 21 34	3695	113 38 26	3706
	Fomalhaut W.	84 44 28	3506	86 4 46	3501	87 25 9	3498	88 45 36	3495
	α Pegasi W.	63 42 4	3250	65 7 14	3243	66 32 32	3237	67 57 58	3230
	Pollux E.	56 14 57	3131	54 47 25	3130	53 19 52	3129	51 52 18	3129
	Regulus E.	92 58 30	3085	91 30 2	3082	90 1 31	3079	88 32 56	3076
	Sun E.	125 55 47	3474	124 34 54	3471	123 13 58	3467	121 52 57	3462
24	α Aquilæ W.	119 59 35	3776	121 15 2	3794	122 30 11	3814	123 44 59	3834
	Fomalhaut W.	95 28 49	3477	96 49 39	3474	98 10 32	3471	99 31 29	3469
	α Pegasi W.	75 7 12	3194	76 33 29	3186	77 59 55	3178	79 26 31	3170
	α Arietis W.	31 37 58	3111	33 5 54	3099	34 34 5	3089	36 2 28	3078
	Pollux E.	44 34 15	3124	43 6 34	3123	41 38 52	3122	40 11 9	3122
	Regulus E.	81 8 51	3053	79 39 44	3048	78 10 31	3042	76 41 10	3035
	Sun E.	115 6 32	3436	113 44 56	3430	112 23 13	3422	111 1 21	3415
25	Fomalhaut W.	106 16 52	3458	107 38 3	3456	108 59 16	3456	110 20 29	3455
	α Pegasi W.	86 41 59	3125	88 9 38	3117	89 37 27	3107	91 5 29	3096
	α Arietis W.	43 27 44	3024	44 57 27	3012	46 27 25	3001	47 57 37	2988
	Pollux E.	32 52 31	3125	31 24 51	3129	29 57 16	3134	28 29 47	3141
	Regulus E.	69 12 14	2997	67 41 58	2987	66 11 29	2978	64 40 49	2969
	Sun E.	104 9 45	3370	102 46 54	3360	101 23 52	3349	100 0 37	3338
26	Fomalhaut W.	117 6 30	3463	118 27 35	3468	119 48 35	3473	121 9 29	3479
	α Pegasi W.	98 28 47	3043	99 58 6	3031	101 27 40	3021	102 57 27	3009
	α Arietis W.	55 32 29	2925	57 4 16	2911	58 36 21	2898	60 8 43	2883
	Aldebaran W.	23 46 10	3163	25 13 3	3122	26 40 46	3084	28 9 15	3050
	Regulus E.	57 4 15	2914	55 32 14	2902	53 59 57	2890	52 27 25	2877
	Sun E.	93 1 0	3276	91 36 20	3262	90 11 24	3247	88 46 11	3233
27	α Pegasi W.	110 30 5	2949	112 1 22	2938	113 32 53	2925	115 4 40	2913
	α Arietis W.	67 55 19	2807	69 29 38	2791	71 4 18	2774	72 39 20	2757
	Aldebaran W.	35 41 17	2910	37 13 23	2885	38 46 1	2862	40 19 9	2838
	Regulus E.	44 40 30	2808	43 6 13	2795	41 31 39	2780	39 56 45	2766
	Sun E.	81 35 38	3154	80 8 34	3138	78 41 10	3120	77 13 25	3103
28	α Arietis W.	80 40 7	2671	82 17 26	2652	83 55 10	2634	85 33 19	2615
	Aldebaran W.	48 12 14	2727	49 48 18	2706	51 24 50	2684	53 1 51	2663
	Regulus E.	31 57 33	2695	30 20 46	2682	28 43 42	2669	27 6 20	2657
	Sun E.	69 49 14	3011	68 19 15	2993	66 48 53	2974	65 18 8	2954
29	α Arietis W.	93 50 21	2523	95 31 2	2504	97 12 10	2485	98 53 44	2467
	Aldebaran W.	61 14 3	2559	62 53 55	2538	64 34 15	2517	66 15 4	2498
	Sun E.	57 38 12	2857	56 4 58	2838	54 31 19	2818	52 57 15	2800
30	α Arietis W.	107 28 7	2375	109 12 18	2357	110 56 54	2340	112 41 56	2322
	Aldebaran W.	74 46 8	2399	76 29 44	2380	78 13 47	2362	79 58 17	2344
	Pollux W.	33 6 17	2482	34 47 55	2453	36 30 15	2425	38 13 14	2399
	Sun E.	45 0 44	2706	43 24 12	2689	41 47 18	2672	40 10 0	2656

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Day of the Month.	Airy's Day Numbers—For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of E	F	G	H	Value of L
1	1·62904	1·25115	0·34665	1·35833	54·605
2	1·63015	1·25900	0·34707	1·35826	54·035
3	1·63120	1·26675	0·34749	1·35820	53·469
4	1·63220	1·27442	0·34791	1·35815	52·905
5	1·63315	1·28200	0·34832	1·35811	52·345
6	1·63405	1·28949	0·34872	1·35808	51·789
7	1·63489	1·29689	0·34912	1·35805	51·237
8	1·63567	1·30420	0·34952	1·35803	50·689
9	1·63641	1·31142	0·34992	1·35803	50·145
10	1·63709	1·31856	0·35031	1·35805	49·605
11	1·63771	1·32561	0·35070	1·35808	49·070
12	1·63828	1·33257	0·35108	1·35811	48·539
13	1·63880	1·33945	0·35146	1·35815	48·012
14	1·63926	1·34624	0·35184	1·35821	47·489
15	1·63967	1·35295	0·35222	1·35828	46·971
16	1·64003	1·35957	0·35260	1·35836	46·458
17	1·64033	1·36610	0·35297	1·35845	45·952
18	1·64058	1·37255	0·35333	1·35855	45·450
19	1·64078	1·37892	0·35372	1·35866	44·954
20	1·64092	1·38520	0·35410	1·35879	44·462
21	1·64100	1·39140	0·35448	1·35893	43·975
22	1·64103	1·39752	0·35485	1·35908	43·494
23	1·64101	1·40356	0·35522	1·35925	43·018
24	1·64093	1·40952	0·35559	1·35943	42·548
25	1·64079	1·41539	0·35596	1·35961	42·086
26	1·64060	1·42119	0·35633	1·35981	41·628
27	1·64036	1·42691	0·35670	1·36002	41·175
28	1·64007	1·43255	0·35707	1·36025	40·729
29	1·63972	1·43812	0·35744	1·36049	40·288
30	1·63932	1·44360	0·35782	1·36074	39·854
31	1·63885	1·44901	0·35820	1·36099	39·425

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Day of the Month.	Bessel's Day Numbers— For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of A	B	C	D	Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0d·965193. Days.	Fr N Ja Day of the Year.
					h m s		
1	+1·2446	−0·8555	+0·0093	−0·3384	13 15 17·98	162	24
2	1·2473	0·8354	0·0102	0·3391	13 11 22·08	163	24
3	1·2499	0·8141	0·0111	0·3397	13 7 26·17	164	24
4	+1·2522	−0·7916	+0·0120	−0·3403	13 3 30·26	165	24
5	1·2545	0·7677	0·0129	0·3407	12 59 34·35	166	24
6	1·2567	0·7423	0·0137	0·3410	12 55 38·44	167	24
7	+1·2587	−0·7151	+0 0146	−0·3412	12 51 42·54	168	24
8	1·2605	0·6860	0·0155	0·3413	12 47 46·63	169	25
9	1·2623	0·6547	0·0163	0·3413	12 43 50·72	170	25
10	+1·2639	−0·6208	+0·0172	−0·3412	12 39 54·82	171	25
11	1·2654	0·5838	0·0180	0·3410	12 35 58·91	172	25
12	1·2667	0·5432	0·0188	0·3407	12 32 3·00	173	25
13	+1·2679	−0·4983	+0·0196	−0·3402	12 28 7·09	174	25
14	1·2690	0·4480	0·0205	0·3396	12 24 11·19	175	25
15	1·2700	0·3910	0·0213	0·3389	12 20 15·28	176	25
16	+1·2708	−0·3251	+0·0221	−0·3381	12 16 19·37	177	25
17	1·2715	0·2473	0·0229	0·3371	12 12 23·47	178	25
18	1·2721	0·1522	0·0237	0·3360	12 8 27·56	179	26
19	+1·2725	−0·0306	+0·0245	−0·3348	12 4 31·65	180	26
20	1·2729	9·8589	0·0253	0·3335	12 0 35·75	181	26
21	1·2731	9·5724	0·0261	0·3320	11 56 39·84	182	26
22	+1·2731	−8·3800	+0·0269	−0·3304	11 52 43·93	183	26
23	1·2731	+9·5128	0·0277	0·3286	11 48 48·02	184	26
24	1·2729	9·8296	0·0285	0·3267	11 44 52·11	185	26
25	+1·2726	+0·0109	+0·0292	−0·3247	11 40 56·21	186	26
26	1·2722	0·1383	0·0300	0·3225	11 37 0·30	187	26
27	1·2716	0·2367	0·0308	0·3202	11 33 4·39	188	26
28	+1·2709	+0·3168	+0·0316	−0·3177	11 29 8·49	189	27
29	1·2701	0·3843	0·0324	0·3151	11 25 12·58	190	27
30	1·2691	0·4427	0·0332	0·3123	11 21 16·67	191	27
31	+1·2680	+0·4941	+0·0340	−0·3094	11 17 20·77	192	27

* Add ·0031 if Fraction be required for the time *t*, see page 327.

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AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 hour.	THE SUN'S Apparent Declination.	Diff. for 1 hour.	Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, *to be subtracted from Apparent Time.*	Diff. for 1 hour.
		h m s	s	° ′ ″	″	m s	m s	s
Tues.	1	12 30 22·80	9·071	S. 3 16 57·5	58·25	1 4·36	10 23·46	0·783
Wed.	2	12 34 0·50	9·085	3 40 15·5	58·15	1 4·41	10 42·26	0·769
Thur.	3	12 37 38·53	9·099	4 3 31·0	58·03	1 4·46	11 0·73	0·755
Frid.	4	12 41 16·90	9·114	4 26 43·7	57·89	1 4·51	11 18·86	0·740
Sat.	5	12 44 55·62	9·129	4 49 53·0	57·74	1 4·56	11 36·65	0·725
Sun.	6	12 48 34·71	9·145	5 12 58·7	57·57	1 4·62	11 54·06	0·709
Mon.	7	12 52 14·19	9·162	5 36 0·4	57·39	1 4·68	12 11·09	0·693
Tues.	8	12 55 54·07	9·180	5 58 57·8	57·19	1 4·74	12 27·72	0·675
Wed.	9	12 59 34·38	9·198	6 21 50·4	56·97	1 4·81	12 43·91	0·657
Thur.	10	13 3 15·13	9·217	6 44 37·7	56·74	1 4·88	12 59·67	0·638
Frid.	11	13 6 56·34	9·237	7 7 19·5	56·50	1 4·95	13 14·98	0·618
Sat.	12	13 10 38·02	9·257	7 29 55·4	56·24	1 5·02	13 29·82	0·597
Sun.	13	13 14 20·19	9·278	7 52 25·1	55·96	1 5·10	13 44·16	0·576
Mon.	14	13 18 2·87	9·301	8 14 48·2	55·67	1 5·18	13 57·99	0·554
Tues.	15	13 21 46·09	9·324	8 37 4·2	55·36	1 5·26	14 11·29	0·531
Wed.	16	13 25 29·86	9·348	8 59 12·9	55·04	1 5·34	14 24·04	0·507
Thur.	17	13 29 14·20	9·372	9 21 13·9	54·70	1 5·43	14 36·22	0·483
Frid.	18	13 32 59·13	9·398	9 43 6·8	54·35	1 5·52	14 47·81	0·458
Sat.	19	13 36 44·68	9·425	10 4 51·2	53·98	1 5·61	14 58·78	0·431
Sun.	20	13 40 30·87	9·452	10 26 26·8	53·60	1 5·70	15 9·12	0·403
Mon.	21	13 44 17·71	9·480	10 47 53·2	53·20	1 5·80	15 18·81	0·375
Tues.	22	13 48 5·22	9·509	11 9 10·1	52·78	1 5·90	15 27·82	0·347
Wed.	23	13 51 53·42	9·538	11 30 16·9	52·35	1 6·00	15 36·15	0·318
Thur.	24	13 55 42·34	9·568	11 51 13·4	51·90	1 6·10	15 43·77	0·287
Frid.	25	13 59 31·98	9·599	12 11 59·2	51·44	1 6·20	15 50·67	0·256
Sat.	26	14 3 22·36	9·631	12 32 33·8	50·96	1 6·31	15 56·82	0·225
Sun.	27	14 7 13·51	9·663	12 52 56·9	50·46	1 6·42	16 2·22	0·193
Mon.	28	14 11 5·43	9·695	13 13 8·0	49·95	1 6·53	16 6·84	0·161
Tues.	29	14 14 58·13	9·728	13 33 6·7	49·42	1 6·64	16 10·69	0·128
Wed.	30	14 18 51·61	9·761	13 52 52·7	48·86	1 6·75	16 13·75	0·095
Thur.	31	14 22 45·89	9·795	14 12 25·3	48·29	1 6·86	16 16·02	0·061
Frid.	32	14 26 40·97		S. 14 31 44·2		1 6·98	16 17·48	

*Mean Time of the Semidiameter passing may be found by subtracting 0·18 from the *Sidereal* Time.

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AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S *Apparent* Right Ascension.	THE SUN'S *Apparent* Declination.	THE SUN'S Semidiam.*	Equation of Time, *to be added to Mean Time.*	Sidereal Time.
		h m s	° ′ ″	′ ″	m s	h m s
Tues.	1	12 30 24·37	S. 3 17 7·6	16 1·4	10 23·59	12 40 47·96
Wed.	2	12 34 2·12	3 40 25·9	16 1·7	10 42·40	12 44 44·52
Thur.	3	12 37 40·20	4 3 41·7	16 2·0	11 0·87	12 48 41·07
Frid.	4	12 41 18·62	4 26 54·6	16 2·3	11 19·00	12 52 37·62
Sat.	5	12 44 57·39	4 50 4·2	16 2·5	11 36·79	12 56 34·17
Sun.	6	12 48 36·53	5 13 10·2	16 2·8	11 54·20	13 0 30·73
Mon.	7	12 52 16·05	5 36 12·1	16 3·1	12 11·23	13 4 27·28
Tues.	8	12 55 55·98	5 59 9·7	16 3·4	12 27·86	13 8 23·84
Wed.	9	12 59 36·34	6 22 2·4	16 3·7	12 44·05	13 12 20·39
Thur.	10	13 3 17·13	6 44 50·0	16 4·0	12 59·81	13 16 16·94
Frid.	11	13 6 58·38	7 7 32·0	16 4·2	13 15·11	13 20 13·49
Sat.	12	13 10 40·10	7 30 8·1	16 4·5	13 29·95	13 24 10·05
Sun.	13	13 14 22·31	7 52 38·0	16 4·8	13 44·29	13 28 6·60
Mon.	14	13 18 5·04	8 15 1·2	16 5·1	13 58·12	13 32 3·16
Tues.	15	13 21 48·29	8 37 17·3	16 5·4	14 11·42	13 35 59·71
Wed.	16	13 25 32·10	8 59 26·1	16 5·7	14 24·16	13 39 56·26
Thur.	17	13 29 16·48	9 21 27·2	16 5·9	14 36·34	13 43 52·82
Frid.	18	13 33 1·45	9 43 20·2	16 6·2	14 47·92	13 47 49·37
Sat.	19	13 36 47·04	10 5 4·7	16 6·5	14 58·89	13 51 45·92
Sun.	20	13 40 33·26	10 26 40·4	16 6·8	15 9·22	13 55 42·48
Mon.	21	13 44 20·13	10 48 6·8	16 7·0	15 18·90	13 59 39·03
Tues.	22	13 48 7·67	11 9 23·7	16 7·3	15 27·91	14 3 35·58
Wed.	23	13 51 55·90	11 30 30·5	16 7·5	15 36·24	14 7 32·14
Thur.	24	13 55 44·85	11 51 27·1	16 7·8	15 43·84	14 11 28·69
Frid.	25	13 59 34·51	12 12 12·8	16 8·0	15 50·74	14 15 25·25
Sat.	26	14 3 24·92	12 32 47·4	16 8·3	15 56·88	14 19 21·80
Sun.	27	14 7 16·09	12 53 10·4	16 8·5	16 2·27	14 23 18·36
Mon.	28	14 11 8·03	13 13 21·5	16 8·8	16 6·88	14 27 14·91
Tues.	29	14 15 0·75	13 33 20·1	16 9·0	16 10·72	14 31 11·47
Wed.	30	14 18 54·25	13 53 5·9	16 9·3	16 13·77	14 35 8·03
Thur.	31	14 22 48·54	14 12 38·4	16 9·5	16 16·04	14 39 4·59
Frid.	32	14 26 43·64	S. 14 31 57·2	16 9·8	16 17·49	14 43 1·15

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

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MEAN TIME.

Day of the Month.	THE SUN'S *Apparent* Longitude. *Noon.*	THE SUN'S *Apparent* Latitude. *Noon.*	Logarithm of the Radius Vector of the Earth. *Noon.*	THE MOON'S Semidiameter. *Noon.*	THE MOON'S Semidiameter. *Midnight.*	THE MOON'S Horisontal Parallax. *Noon.*	THE MOON'S Horisontal Parallax. *Midnight.*
	° ′ ″	″		′ ″	′ ″	′ ″	′ ″
1	188 16 38·3	S. 0·36	0·0001691	16 9·9	16 17·1	59 11·2	59 37·5
2	189 15 45·8	0·42	0·0000453	16 23·7	16 29·5	60 1·7	60 23·0
3	190 14 55·5	0·46	9·9999209	16 34·4	16 38·2	60 40·9	60 54·7
4	191 14 7·2	0·47	9·9997958	16 40·8	16 42·0	61 4·2	61 8·9
5	192 13 20·9	0·44	9·9996701	16 42·0	16 40·8	61 8·9	61 4·2
6	193 12 36·6	0·38	9·9995439	16 38·3	16 34·7	60 55·1	60 42·0
7	194 11 54·2	0·30	9·9994172	16 30·1	16 24·8	60 25·4	60 5·9
8	195 11 13·7	0·20	9·9992901	16 18·9	16 12·5	59 44·1	59 20·7
9	196 10 35·1	S. 0·08	9·9991628	16 5·8	15 59·0	58 56·2	58 31·3
10	197 9 58·2	N. 0·05	9·9990354	15 52·2	15 45·5	58 6·3	57 41·8
11	198 9 23·1	0·18	9·9989081	15 39·0	15 32·8	57 18·0	56 55·3
12	199 8 49·7	0·30	9·9987811	15 26·9	15 21·4	56 33·8	56 13·7
13	200 8 18·0	0·41	9·9986544	15 16·3	15 11·6	55 55·0	55 37·8
14	201 7 48·1	0·50	9·9985282	15 7·3	15 3·4	55 22·0	55 7·8
15	202 7 20·1	0·58	9·9984028	14 59·9	14 56·8	54 55·0	54 43·5
16	203 6 53·8	0·62	9·9982782	14 54·0	14 51·6	54 33·3	54 24·4
17	204 6 29·4	0·62	9·9981546	14 49·5	14 47·7	54 16·8	54 10·4
18	205 6 7·0	0·60	9·9980320	14 46·3	14 45·2	54 5·3	54 1·3
19	206 5 46·5	0·56	9·9979105	14 44·5	14 44·2	53 58·7	53 57·3
20	207 5 28·1	0·48	9·9977902	14 44·2	14 44·6	53 57·3	53 58·8
21	208 5 11·7	0·38	9·9976710	14 45·4	14 46·6	54 1·8	54 6·4
22	209 4 57·3	0·26	9·9975531	14 48·4	14 50·6	54 12·8	54 20·9
23	210 4 45·1	N. 0·13	9·9974363	14 53·4	14 56·6	54 31·0	54 43·0
24	211 4 35·2	S. 0·01	9·9973205	15 0·5	15 4·9	54 57·1	55 13·3
25	212 4 27·5	0·15	9·9972056	15 9·9	15 15·5	55 31·6	55 52·1
26	213 4 22·1	0·28	9·9970917	15 21·6	15 28·2	56 14·4	56 38·7
27	214 4 18·8	0·40	9·9969786	15 35·3	15 42·7	57 4·5	57 31·8
28	215 4 17·8	0·50	9·9968661	15 50·5	15 58·3	58 0·1	58 28·9
29	216 4 19·0	0·57	9·9967543	16 6·2	16 13·9	58 57·7	59 25·8
30	217 4 22·3	0·61	9·9966432	16 21·2	16 28·0	59 52·7	60 17·5
31	218 4 27·6	0·62	9·9965325	16 34·0	16 39·1	60 39·5	60 58·0
32	219 4 34·9	S. 0·60	9·9964222	16 43·0	16 45·6	61 12·4	61 22·1

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MEAN TIME.

THE MOON'S

Day of the Week.	Day of the Month.	Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.	Age. Noon.	Meridian Passage.
		° ′ ″	° ′ ″	° ′ ″	° ′ ″	d	h m
Tues.	1	149 54 15·7	157 3 6·6	S. 3 53 12·3	S. 4 15 1·7	26·6	22 6·
Wed.	2	164 18 47·6	171 40 39·5	4 33 5·0	4 46 51·9	27·6	22 58·
Thur.	3	179 7 49·0	186 39 11·5	4 55 56·6	4 59 59·6	28·6	23 51·
Frid.	4	194 13 32·4	201 49 31·0	4 58 49·1	4 52 21·5	0·2	0
Sat.	5	209 25 43·7	217 0 48·7	4 40 42·8	4 24 7·5	1·2	0 47·
Sun.	6	224 33 29·4	232 2 37·9	4 2 59·1	3 37 47·1	2·2	1 47·
Mon.	7	239 27 17·3	246 46 42·8	3 9 6·5	2 37 35·9	3·2	2 48·
Tues.	8	254 0 22·7	261 7 57·8	2 3 54·2	1 28 41·7	4·2	3 50·
Wed.	9	268 9 19·4	275 4 29·4	S. 0 52 36·6	S. 0 16 15·1	5·2	4 51·
Thur.	10	281 53 37·5	288 36 59·3	N. 0 19 50·1	N. 0 55 8·1	6·2	5 48·
Frid.	11	295 14 55·2	301 47 48·2	1 29 12·5	2 1 39·2	7·2	6 41·
Sat.	12	308 16 3·4	314 40 5·8	2 32 7·5	3 0 18·8	8·2	7 30·
Sun.	13	321 0 20·6	327 17 11·3	3 25 58·0	3 48 51·5	9·2	8 15·
Mon.	14	333 30 59·4	339 42 5·6	4 8 47·9	4 25 38·5	10·2	8 59·
Tues.	15	345 50 47·3	351 57 20·4	4 39 16·0	4 49 35·1	11·2	9 41·
Wed.	16	358 1 58·2	4 4 52·2	4 56 32·7	5 0 7·2	12·2	10 22·
Thur.	17	10 6 13·0	16 6 9·8	5 0 19·0	4 57 10·3	13·2	11 4·
Frid.	18	22 4 51·4	28 2 26·7	4 50 45·2	4 41 9·4	14·2	11 47·
Sat.	19	33 59 4·8	39 54 56·0	4 28 30·2	4 12 56·4	15·2	12 31·
Sun.	20	45 50 11·8	51 45 7·0	3 54 38·4	3 33 47·1	16·2	13 18·
Mon.	21	57 39 56·7	63 34 59·4	3 10 35·8	2 45 17·3	17·2	14 6·
Tues.	22	69 30 36·7	75 27 12·2	2 18 6·3	1 49 18·0	18·2	14 56·
Wed.	23	81 25 13·0	87 25 8·4	1 19 8·3	N. 0 47 53·9	19·2	15 46·
Thur.	24	93 27 30·5	99 32 53·2	N. 0 15 52·2	S. 0 16 37·8	20·2	16 37·
Frid.	25	105 41 52·3	111 55 4·4	S. 0 49 17·1	1 21 44·7	21·2	17 27·
Sat.	26	118 13 6·6	124 36 34·8	1 53 38·4	2 24 34·5	22·2	18 16·
Sun.	27	131 6 3·5	137 42 3·7	2 54 8·0	3 21 51·9	23·2	19 4·
Mon.	28	144 25 1·4	151 15 16·0	3 47 18·1	4 9 57·6	24·2	19 53·
Tues.	29	158 12 58·5	165 18 9·6	4 29 20·5	4 44 57·4	25·2	20 42·
Wed.	30	172 30 37·6	179 49 57·9	4 56 20·7	5 3 5·9	26·2	21 34·
Thur.	31	187 15 31·5	194 46 25·5	5 4 52·4	5 1 26·4	27·2	22 28·
Frid.	32	202 21 34·6	209 59 42·3	S. 4 52 41·5	S. 4 38 40·7	28·2	23 27·

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 1.				*THURSDAY* 3.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	10 2 29·57	N. 7 52 21·5	141·62	0	11 48 56·57	S. 4 10 40·6	153·91
1	10 4 40·70	7 38 11·8	142·22	1	11 51 13·01	4 26 4·0	153·76
2	10 6 51·86	7 23 58·5	142·81	2	11 53 29·65	4 41 26·6	153·58
3	10 9 3·06	7 9 41·6	143·38	3	11 55 46·49	4 56 48·1	153·40
4	10 11 14·29	6 55 21·3	143·94	4	11 58 3·53	5 12 8·5	153·19
5	10 13 25·57	6 40 57·6	144·49	5	12 0 20·78	5 27 27·6	152·96
6	10 15 36·89	6 26 30·7	145·02	6	12 2 38·24	5 42 45·3	152·72
7	10 17 48·25	6 12 0·5	145·54	7	12 4 55·91	5 58 1·6	152·45
8	10 19 59·67	5 57 27·2	146·05	8	12 7 13·80	6 13 16·3	152·17
9	10 22 11·14	5 42 50·9	146·55	9	12 9 31·91	6 28 29·3	151·86
10	10 24 22·66	5 28 11·7	147·03	10	12 11 50·24	6 43 40·5	151·54
11	10 26 34·24	5 13 29·5	147·50	11	12 14 8·79	6 58 49·8	151·20
12	10 28 45·89	4 58 44·5	147·95	12	12 16 27·57	7 13 57·0	150·85
13	10 30 57·60	4 43 56·8	148·39	13	12 18 46·58	7 29 2·1	150·47
14	10 33 9·38	4 29 6·5	148·82	14	12 21 5·83	7 44 4·9	150·07
15	10 35 21·24	4 14 13·6	149·23	15	12 23 25·31	7 59 5·3	149·65
16	10 37 33·18	3 59 18·2	149·63	16	12 25 45·03	8 14 3·2	149·21
17	10 39 45·19	3 44 20·4	150·01	17	12 28 5·00	8 28 58·5	148·75
18	10 41 57·28	3 29 20·4	150·37	18	12 30 25·21	8 43 51·0	148·27
19	10 44 9·47	3 14 18·1	150·73	19	12 32 45·66	8 58 40·6	147·78
20	10 46 21·74	2 59 13·7	151·06	20	12 35 6·37	9 13 27·3	147·26
21	10 48 34·11	2 44 7·4	151·39	21	12 37 27·33	9 28 10·9	146·72
22	10 50 46·57	2 28 59·1	151·69	22	12 39 48·54	9 42 51·2	146·17
23	10 52 59 14	N. 2 13 48·9	151·99	23	12 42 10·01	S. 9 57 28·2	145·59
	WEDNESDAY 2.				*FRIDAY* 4.		
0	10 55 11·81	N. 1 58 36·9	152·26	0	12 44 31·74	S. 10 12 1·7	144·99
1	10 57 24·59	1 43 23·3	152·52	1	12 46 53·73	10 26 31·7	144·38
2	10 59 37·48	1 28 8·1	152·77	2	12 49 15·98	10 40 58·0	143·74
3	11 1 50·49	1 12 51·5	153·00	3	12 51 38·50	10 55 20·4	143·09
4	11 4 3·61	0 57 33·5	153·21	4	12 54 1·29	11 9 38·9	142·41
5	11 6 16·86	0 42 14·2	153·41	5	12 56 24·34	11 23 53·4	141·71
6	11 8 30·23	0 26 53·8	153·59	6	12 58 47·67	11 38 3·7	141·00
7	11 10 43·73	N. 0 11 32·3	153·75	7	13 1 11·26	11 52 9·7	140·26
8	11 12 57·37	S. 0 3 50·2	153·89	8	13 3 35·13	12 6 11·3	139·51
9	11 15 11·14	0 19 13·6	154·02	9	13 5 59·28	12 20 8·3	138·73
10	11 17 25·05	0 34 37·7	154·14	10	13 8 23·70	12 34 0·7	137·94
11	11 19 39·11	0 50 2·6	154·23	11	13 10 48·39	12 47 48·3	137·13
12	11 21 53·32	1 5 28·0	154·32	12	13 13 13·37	13 1 31·1	136·30
13	11 24 7·68	1 20 53·9	154·38	13	13 15 38·62	13 15 8·9	135·44
14	11 26 22·19	1 36 20·2	154·43	14	13 18 4·15	13 28 41·5	134·57
15	11 28 36·86	1 51 46·7	154·46	15	13 20 29·96	13 42 8·9	133·67
16	11 30 51·69	2 7 13·5	154·46	16	13 22 56·06	13 55 31·0	132·76
17	11 33 6·68	2 22 40·3	154·46	17	13 25 22·44	14 8 47·6	131·83
18	11 35 21·84	2 38 7·0	154·43	18	13 27 49·10	14 21 58·6	130·88
19	11 37 37·18	2 53 33·6	154·39	19	13 30 16·04	14 35 3·9	129·91
20	11 39 52·69	3 9 0·0	154·33	20	13 32 43·27	14 48 3·3	128·92
21	11 42 8·38	3 24 25·9	154·25	21	13 35 10·78	15 0 56·9	127·91
22	11 44 24·26	3 39 51·4	154·16	22	13 37 38·57	15 13 44·4	126·88
23	11 46 40·32	3 55 16·4	154·04	23	13 40 6·65	15 26 25·7	125·84
24	11 48 56·57	S. 4 10 40·6		24	13 42 35·02	S. 15 39 0·7	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 5.				*MONDAY 7.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	13 42 35·02	S. 15 39 0·7	124·78	0	15 46 2·45	S. 23 7 33·3	55·53
1	13 45 3·66	15 51 29·4	123·69	1	15 48 40·99	23 13 6·5	53·82
2	13 47 32·58	16 3 51·6	122·59	2	15 51 19·61	23 18 29·4	52·10
3	13 50 1·78	16 16 7·1	121·47	3	15 53 58·29	23 23 42·0	50·38
4	13 52 31·26	16 28 15·9	120·33	4	15 56 37·02	23 28 44·3	48·66
5	13 55 1·01	16 40 17·9	119·17	5	15 59 15·80	23 33 36·3	46·93
6	13 57 31·05	16 52 13·0	118·00	6	16 1 54·62	23 38 17·9	45·20
7	14 0 1·36	17 4 1·0	116·81	7	16 4 33·47	23 42 49·1	43·46
8	14 2 31·94	17 15 41·8	115·60	8	16 7 12·35	23 47 9·9	41·72
9	14 5 2·79	17 27 15·4	114·38	9	16 9 51·24	23 51 20·2	39·97
10	14 7 33·92	17 38 41·7	113·13	10	16 12 30·14	23 55 20·1	38·23
11	14 10 5·31	17 50 0·5	111·87	11	16 15 9·04	23 59 9·5	36·48
12	14 12 36·97	18 1 11·7	110·60	12	16 17 47·93	24 2 48·4	34·73
13	14 15 8·89	18 12 15·3	109·30	13	16 20 26·81	24 6 16·8	32·99
14	14 17 41·08	18 23 11·1	107·99	14	16 23 5·66	24 9 34·7	31·24
15	14 20 13·52	18 33 59·1	106·67	15	16 25 44·47	24 12 42·2	29·49
16	14 22 46·22	18 44 39·1	105·32	16	16 28 23·24	24 15 39·1	27·74
17	14 25 19·17	18 55 11·0	103·96	17	16 31 1·97	24 18 25·5	25·99
18	14 27 52·37	19 5 34·8	102·59	18	16 33 40·64	24 21 1·5	24·24
19	14 30 25·81	19 15 50·4	101·20	19	16 36 19·24	24 23 26·9	22·49
20	14 32 59·49	19 25 57·6	99·79	20	16 38 57·77	24 25 41·9	20·75
21	14 35 33·42	19 35 56·3	98·37	21	16 41 36·22	24 27 46·4	19·00
22	14 38 7·58	19 45 46·5	96·94	22	16 44 14·58	24 29 40·4	17·26
23	14 40 41·97	S. 19 55 28·1	95·49	23	16 46 52·84	S. 24 31 24·0	15·52
	SUNDAY 6.				*TUESDAY 8.*		
0	14 43 16·59	S. 20 5 1·1	94·03	0	16 49 30·99	S. 24 32 57·1	13·79
1	14 45 51·43	20 14 25·3	92·56	1	16 52 9·03	24 34 19·8	12·06
2	14 48 26·49	20 23 40·6	91·07	2	16 54 46·94	24 35 32·2	10·33
3	14 51 1·77	20 32 47·0	89·56	3	16 57 24·72	24 36 34·2	8·60
4	14 53 37·26	20 41 44·4	88·05	4	17 0 2·36	24 37 25·8	6·88
5	14 56 12·95	20 50 32·7	86·52	5	17 2 39·85	24 38 7·1	5·17
6	14 58 48·84	20 59 11·8	84·98	6	17 5 17·19	24 38 38·1	3·46
7	15 1 24·93	21 7 41·7	83·43	7	17 7 54·36	24 38 58·8	1·75
8	15 4 1·20	21 16 2·3	81·86	8	17 10 31·36	24 39 9·4	0·05
9	15 6 37·66	21 24 13·4	80·28	9	17 13 8·19	24 39 9·7	1·64
10	15 9 14·29	21 32 15·1	78·70	10	17 15 44·83	24 38 59·8	3·33
11	15 11 51·10	21 40 7·3	77·10	11	17 18 21·28	24 38 39·8	5·01
12	15 14 28·07	21 47 49·9	75·49	12	17 20 57·53	24 38 9·7	6·69
13	15 17 5·21	21 55 22·9	73·87	13	17 23 33·57	24 37 29·6	8·36
14	15 19 42·50	22 2 46·1	72·25	14	17 26 9·39	24 36 39·4	10·02
15	15 22 19·94	22 9 59·6	70·61	15	17 28 44·98	24 35 39·3	11·67
16	15 24 57·52	22 17 3·3	68·97	16	17 31 20·35	24 34 29·3	13·31
17	15 27 35·24	22 23 57·1	67·31	17	17 33 55·48	24 33 9·4	14·95
18	15 30 13·09	22 30 41·0	65·65	18	17 36 30·37	24 31 39·7	16·58
19	15 32 51·05	22 37 14·9	63·98	19	17 39 5·00	24 30 0·2	18·19
20	15 35 29·13	22 43 38·8	62·31	20	17 41 39·38	24 28 11·1	19·80
21	15 38 7·32	22 49 52·6	60·62	21	17 44 13·50	24 26 12·3	21·40
22	15 40 45·61	22 55 56·3	58·93	22	17 46 47·35	24 24 3·9	23·00
23	15 43 23·99	23 1 49·9	57·23	23	17 49 20·92	24 21 45·9	24·58
24	15 46 2·45	S. 23 7 33·3		24	17 51 54·21	S. 24 19 18·4	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 9.				*FRIDAY* 11.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	17 51 54·21	S. 24 19 18·4	26·15	0	19 47 40·79	S. 19 38 26·7	87·17
1	17 54 27·21	24 16 41·5	27·71	1	19 49 56·05	19 29 43·7	88·11
2	17 56 59·92	24 13 55·3	29·26	2	19 52 10·91	19 20 55·0	89·05
3	17 59 32·33	24 10 59·7	30·80	3	19 54 25·38	19 12 0·7	89·97
4	18 2 4·44	24 7 54·9	32·33	4	19 56 39·47	19 3 0·9	90·87
5	18 4 36·24	24 4 41·0	33·84	5	19 58 53·17	18 53 55·7	91·77
6	18 7 7·72	24 1 17·9	35·35	6	20 1 6·48	18 44 45·1	92·65
7	18 9 38·89	23 57 45·8	36·85	7	20 3 19·40	18 35 29·2	93·51
8	18 12 9·73	23 54 4·7	38·33	8	20 5 31·94	18 26 8·1	94·37
9	18 14 40·24	23 50 14·7	39·80	9	20 7 44·10	18 16 41·9	95·21
10	18 17 10·42	23 46 15·9	41·27	10	20 9 55·88	18 7 10·7	96·03
11	18 19 40·26	23 42 8·3	42·71	11	20 12 7·28	17 57 34·5	96·85
12	18 22 9·76	23 37 52·1	44·15	12	20 14 18·31	17 47 53·4	97·66
13	18 24 38·91	23 33 27·2	45·58	13	20 16 28·96	17 38 7·5	98·45
14	18 27 7·71	23 28 53·7	46·99	14	20 18 39·24	17 28 16·8	99·23
15	18 29 36·16	23 24 11·8	48·39	15	20 20 49·15	17 18 21·4	99·99
16	18 32 4·25	23 19 21·4	49·78	16	20 22 58·69	17 8 21·4	100·75
17	18 34 31·98	23 14 22·7	51·15	17	20 25 7·87	16 58 16·9	101·49
18	18 36 59·34	23 9 15·8	52·51	18	20 27 16·68	16 48 8·0	102·21
19	18 39 26·34	23 4 0·7	53·86	19	20 29 25·14	16 37 54·8	102·93
20	18 41 52·97	22 58 37·5	55·20	20	20 31 33·24	16 27 37·2	103·63
21	18 44 19·22	22 53 6·3	56·52	21	20 33 40·98	16 17 15·4	104·33
22	18 46 45·10	22 47 27·2	57·83	22	20 35 48·37	16 6 49·4	105·00
23	18 49 10·60	S. 22 41 40·2	59·13	23	20 37 55·42	S. 15 56 19·4	105·67
	THURSDAY 10.				*SATURDAY* 12.		
0	18 51 35·71	S. 22 35 45·4	60·41	0	20 40 2·11	S. 15 45 45·4	106·33
1	18 54 0·45	22 29 43·0	61·68	1	20 42 8·46	15 35 7·4	106·97
2	18 56 24·80	22 23 32·9	62·94	2	20 44 14·48	15 24 25·6	107·60
3	18 58 48·76	22 17 15·2	64·18	3	20 46 20·16	15 13 40·0	108·22
4	19 1 12·33	22 10 50·1	65·41	4	20 48 25·50	15 2 50·6	108·83
5	19 3 35·52	22 4 17·7	66·63	5	20 50 30·51	14 51 57·6	109·43
6	19 5 58·31	21 57 37·9	67·83	6	20 52 35·20	14 41 1·0	110·02
7	19 8 20·71	21 50 50·9	69·02	7	20 54 39·56	14 30 0·9	110·59
8	19 10 42·72	21 43 56·8	70·19	8	20 56 43·60	14 18 57·4	111·16
9	19 13 4·33	21 36 55·7	71·36	9	20 58 47·32	14 7 50·4	111·71
10	19 15 25·54	21 29 47·5	72·50	10	21 0 50·73	13 56 40·1	112·26
11	19 17 46·36	21 22 32·5	73·64	11	21 2 53·82	13 45 26·6	112·79
12	19 20 6·78	21 15 10·7	74·76	12	21 4 56·61	13 34 9·9	113·31
13	19 22 26·80	21 7 42·1	75·87	13	21 6 59·10	13 22 50·0	113·82
14	19 24 46·42	21 0 6·9	76·97	14	21 9 1·28	13 11 27·1	114·32
15	19 27 5·65	20 52 25·1	78·05	15	21 11 3·16	13 0 1·2	114·81
16	19 29 24·48	20 44 36·8	79·12	16	21 13 4·76	12 48 32·3	115·29
17	19 31 42·90	20 36 42·1	80·17	17	21 15 6·06	12 37 0·6	115·75
18	19 34 0·93	20 28 41·0	81·21	18	21 17 7·07	12 25 26·1	116·21
19	19 36 18·57	20 20 33·8	82·24	19	21 19 7·80	12 13 48·8	116·66
20	19 38 35·80	20 12 20·4	83·25	20	21 21 8·26	12 2 8·9	117·09
21	19 40 52·64	20 4 0·9	84·25	21	21 23 8·44	11 50 26·3	117·52
22	19 43 9·08	19 55 35·4	85·23	22	21 25 8·34	11 38 41·2	117·93
23	19 45 25·13	19 47 4·0	86·21	23	21 27 7·97	11 26 53·6	118·34
24	19 47 40·79	S. 19 38 26·7		24	21 29 7·34	S. 11 15 3·6	

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	SUNDAY 13.				*TUESDAY* 15.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	21 29 7·34	S. 11 15 3·6	118·73	0	23 0 40·97	S. 1 17 37·2	127·07
1	21 31 6·45	11 3 11·2	119·12	1	23 2 32·07	1 4 54·8	127·05
2	21 33 5·31	10 51 16·5	119·49	2	23 4 23·10	0 52 12·5	127·01
3	21 35 3·91	10 39 19·5	119·86	3	23 6 14·06	0 39 30·4	126·97
4	21 37 2·26	10 27 20·4	120·22	4	23 8 4·96	0 26 48·6	126·92
5	21 39 0·37	10 15 19·1	120·56	5	23 9 55·79	0 14 7·1	126·86
6	21 40 58·23	10 3 15·7	120·90	6	23 11 46·56	S. 0 1 25·9	126·79
7	21 42 55·85	9 51 10·3	121·22	7	23 13 37·28	N. 0 11 14·9	126·72
8	21 44 53·24	9 39 3·0	121·54	8	23 15 27·94	0 23 55·2	126·64
9	21 46 50·40	9 26 53·7	121·85	9	23 17 18·56	0 36 35·0	126·55
10	21 48 47·33	9 14 42·6	122·15	10	23 19 9·13	0 49 14·3	126·45
11	21 50 44·04	9 2 29·7	122·43	11	23 20 59·66	1 1 53·0	126·35
12	21 52 40·53	8 50 15·2	122·71	12	23 22 50·15	1 14 31·1	126·24
13	21 54 36·80	8 37 58·9	122·98	13	23 24 40·61	1 27 8·5	126·12
14	21 56 32·87	8 25 41·0	123·24	14	23 26 31·04	1 39 45·2	125·99
15	21 58 28·72	8 13 21·6	123·50	15	23 28 21·44	1 52 21·2	125·86
16	22 0 24·37	8 1 0·6	123·74	16	23 30 11·82	2 4 56·4	125·72
17	22 2 19·82	7 48 38·1	123·98	17	23 32 2·18	2 17 30·7	125·57
18	22 4 15·08	7 36 14·2	124·20	18	23 33 52·52	2 30 4·1	125·42
19	22 6 10·14	7 23 49·0	124·42	19	23 35 42·85	2 42 36·6	125·25
20	22 8 5·02	7 11 22·6	124·63	20	23 37 33·16	2 55 8·1	125·08
21	22 9 59·71	6 58 54·8	124·83	21	23 39 23·47	3 7 38·6	124·90
22	22 11 54·22	6 46 25·8	125·02	22	23 41 13·78	3 20 8·1	124·71
23	22 13 48·56	S. 6 33 55·7	125·20	23	23 43 4·09	N. 3 32 36·4	124·52
	MONDAY 14.				*WEDNESDAY* 16.		
0	22 15 42·72	S. 6 21 24·5	125·38	0	23 44 54·40	N. 3 45 3·5	124·32
1	22 17 36·72	6 8 52·2	125·54	1	23 46 44·72	3 57 29·5	124·12
2	22 19 30·55	5 56 19·0	125·70	2	23 48 35·05	4 9 54·2	123·90
3	22 21 24·22	5 43 44·8	125·85	3	23 50 25·39	4 22 17·6	123·68
4	22 23 17·73	5 31 9·7	125·99	4	23 52 15·75	4 34 39·7	123·45
5	22 25 11·09	5 18 33·7	126·12	5	23 54 6·13	4 47 0·4	123·22
6	22 27 4·30	5 5 57·0	126·24	6	23 55 56·53	4 59 19·7	122·97
7	22 28 57·37	4 53 19·6	126·36	7	23 57 46·96	5 11 37·5	122·72
8	22 30 50·30	4 40 41·4	126·46	8	23 59 37·42	5 23 53·9	122·46
9	22 32 43·09	4 28 2·6	126·56	9	0 1 27·91	5 36 8·7	122·20
10	22 34 35·74	4 15 23·2	126·65	10	0 3 18·43	5 48 21·9	121·92
11	22 36 28·26	4 2 43·3	126·73	11	0 5 9·00	6 0 33·4	121·64
12	22 38 20·66	3 50 3·0	126·81	12	0 6 59·61	6 12 43·2	121·35
13	22 40 12·94	3 37 22·2	126·87	13	0 8 50·26	6 24 51·3	121·06
14	22 42 5·10	3 24 40·9	126·93	14	0 10 40·97	6 36 57·7	120·76
15	22 43 57·14	3 11 59·3	126·98	15	0 12 31·72	6 49 2·2	120·45
16	22 45 49·07	2 59 17·4	127·02	16	0 14 22·53	7 1 4·9	120·13
17	22 47 40·89	2 46 35·3	127·06	17	0 16 13·39	7 13 5·7	119·81
18	22 49 32·61	2 33 52·9	127·08	18	0 18 4·32	7 25 4·6	119·48
19	22 51 24·23	2 21 10·4	127·10	19	0 19 55·31	7 37 1·4	119·14
20	22 53 15·76	2 8 27·8	127·11	20	0 21 46·36	7 48 56·2	118·79
21	22 55 7·19	1 55 45·1	127·11	21	0 23 37·48	8 0 49·0	118·44
22	22 56 58·53	1 43 2·4	127·11	22	0 25 28·68	8 12 39·7	118·08
23	22 58 49·79	1 30 19·8	127·09	23	0 27 19·96	8 24 28·2	117·71
24	23 0 40·97	S. 1 17 37·2		24	0 29 11·31	N. 8 36 14·4	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 17.		
	h m s	° ′ ″	″
0	0 29 11·31	N. 8 36 14·4	117·34
1	0 31 2·74	8 47 58·4	116·95
2	0 32 54·26	8 59 40·1	116·56
3	0 34 45·86	9 11 19·5	116·17
4	0 36 37·55	9 22 56·6	115·76
5	0 38 29·33	9 34 31·2	115·35
6	0 40 21·21	9 46 3·3	114·93
7	0 42 13·18	9 57 32·9	114·51
8	0 44 5·25	10 8 59·9	114·08
9	0 45 57·42	10 20 24·4	113·63
10	0 47 49·70	10 31 46·2	113·19
11	0 49 42·09	10 43 5·3	112·73
12	0 51 34·58	10 54 21·7	112·27
13	0 53 27·19	11 5 35·3	111·80
14	0 55 19·91	11 16 46·1	111·32
15	0 57 12·75	11 27 54·1	110·84
16	0 59 5·71	11 38 59·1	110·35
17	1 0 58·79	11 50 1·2	109·85
18	1 2 51·99	12 1 0·3	109·34
19	1 4 45·32	12 11 56·4	108·83
20	1 6 38·78	12 22 49·3	108·31
21	1 8 32·37	12 33 39·2	107·78
22	1 10 26·09	12 44 25·9	107·24
23	1 12 19·95	N.12 55 9·3	106·70
	FRIDAY 18.		
0	1 14 13·95	N.13 5 49·5	106·15
1	1 16 8·09	13 16 26·4	105·60
2	1 18 2·37	13 27 0·0	105·03
3	1 19 56·79	13 37 30·2	104·46
4	1 21 51·35	13 47 57·0	103·88
5	1 23 46·06	13 58 20·3	103·30
6	1 25 40·92	14 8 40·1	102·70
7	1 27 35·94	14 18 56·3	102·10
8	1 29 31·11	14 29 8·9	101·49
9	1 31 26·43	14 39 17·8	100·88
10	1 33 21·91	14 49 23·1	100·25
11	1 35 17·54	14 59 24·6	99·62
12	1 37 13·33	15 9 22·3	98·98
13	1 39 9·28	15 19 16·2	98·34
14	1 41 5·40	15 29 6·2	97·68
15	1 43 1·68	15 38 52·3	97·02
16	1 44 58·13	15 48 34·5	96·36
17	1 46 54·74	15 58 12·6	95·68
18	1 48 51·53	16 7 46·7	95·00
19	1 50 48·48	16 17 16·7	94·31
20	1 52 45·61	16 26 42·6	93·62
21	1 54 42·91	16 36 4·3	92·92
22	1 56 40·38	16 45 21·8	92·20
23	1 58 38·03	16 54 35·1	91·48
24	2 0 35·86	N.17 3 44·0	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 19.		
	h m s	° ′ ″	″
0	2 0 35·86	N.17 3 44·0	90·76
1	2 2 33·86	17 12 48·6	90·03
2	2 4 32·04	17 21 48·8	89·29
3	2 6 30·40	17 30 44·5	88·54
4	2 8 28·95	17 39 35·8	87·79
5	2 10 27·67	17 48 22·5	87·03
6	2 12 26·57	17 57 4·7	86·26
7	2 14 25·65	18 5 42·3	85·49
8	2 16 24·92	18 14 15·2	84·71
9	2 18 24·37	18 22 43·5	83·92
10	2 20 24·00	18 31 7·0	83·12
11	2 22 23·82	18 39 25·7	82·32
12	2 24 23·83	18 47 39·6	81·51
13	2 26 24·02	18 55 48·7	80·69
14	2 28 24·40	19 3 52·8	79·86
15	2 30 24·96	19 11 52·0	79·03
16	2 32 25·71	19 19 46·2	78·20
17	2 34 26·65	19 27 35·4	77·35
18	2 36 27·77	19 35 19·5	76·50
19	2 38 29·08	19 42 58·5	75·64
20	2 40 30·58	19 50 32·3	74·78
21	2 42 32·27	19 58 1·0	73·90
22	2 44 34·15	20 5 24·4	73·02
23	2 46 36·22	N.20 12 42·5	72·14
	SUNDAY 20.		
0	2 48 38·47	N.20 19 55·4	71·25
1	2 50 40·91	20 27 2·9	70·35
2	2 52 43·54	20 34 5·0	69·44
3	2 54 46·36	20 41 1·6	68·53
4	2 56 49·37	20 47 52·8	67·61
5	2 58 52·56	20 54 38·5	66·69
6	3 0 55·93	21 1 18·7	65·76
7	3 2 59·49	21 7 53·2	64·82
8	3 5 3·24	21 14 22·1	63·88
9	3 7 7·17	21 20 45·4	62·93
10	3 9 11·28	21 27 3·0	61·97
11	3 11 15·57	21 33 14·8	61·01
12	3 13 20·05	21 39 20·8	60·04
13	3 15 24·70	21 45 21·1	59·07
14	3 17 29·54	21 51 15·5	58·09
15	3 19 34·55	21 57 4·0	57·10
16	3 21 39·73	22 2 46·6	56·11
17	3 23 45·10	22 8 23·2	55·11
18	3 25 50·64	22 13 53·9	54·11
19	3 27 56·35	22 19 18·6	53·10
20	3 30 2·23	22 24 37·2	52·08
21	3 32 8·28	22 29 49·7	51·06
22	3 34 14·50	22 34 56·0	50·03
23	3 36 20·89	22 39 56·2	49·00
24	3 38 27·45	N.22 44 50·2	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 21.				*WEDNESDAY 23.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	3 38 27·45	N.22 44 50·2	47·96	0	5 22 16·02	N.24 29 45·9	6·66
1	3 40 34·17	22 49 38·0	46·92	1	5 24 27·92	24 29 6·0	7·86
2	3 42 41·06	22 54 19·5	45·87	2	5 26 39·86	24 28 18·8	9·06
3	3 44 48·11	22 58 54·7	44·81	3	5 28 51·84	24 27 24·5	10·26
4	3 46 55·31	23 3 23·5	43·75	4	5 31 3·85	24 26 22·9	11·46
5	3 49 2·68	23 7 46·0	42·69	5	5 33 15·89	24 25 14·2	12·66
6	3 51 10·20	23 12 2·2	41·62	6	5 35 27·95	24 23 58·2	13·87
7	3 53 17·88	23 16 11·9	40·55	7	5 37 40·04	24 22 35·0	15·07
8	3 55 25·70	23 20 15·2	39·47	8	5 39 52·15	24 21 4·6	16·27
9	3 57 33·68	23 24 12·0	38·38	9	5 42 4·28	24 19 26·9	17·48
10	3 59 41·81	23 28 2·2	37·29	10	5 44 16·42	24 17 42·1	18·68
11	4 1 50·08	23 31 46·0	36·20	11	5 46 28·57	24 15 50·0	19·88
12	4 3 58·49	23 35 23·2	35·11	12	5 48 40·73	24 13 50·7	21·09
13	4 6 7·05	23 38 53·8	34·01	13	5 50 52·90	24 11 44·2	22·29
14	4 8 15·75	23 42 17·9	32·90	14	5 53 5·08	24 9 30·4	23·49
15	4 10 24·58	23 45 35·3	31·78	15	5 55 17·25	24 7 9·5	24·69
16	4 12 33·55	23 48 46·0	30·67	16	5 57 29·42	24 4 41·3	25·90
17	4 14 42·66	23 51 50·0	29·55	17	5 59 41·59	24 2 5·9	27·10
18	4 16 51·89	23 54 47·3	28·43	18	6 1 53·76	23 59 22·2	28·30
19	4 19 1·25	23 57 37·9	27·30	19	6 4 5·91	23 56 33·2	29·49
20	4 21 10·73	24 0 21·7	26·17	20	6 6 18·05	23 53 36·6	30·69
21	4 23 20·34	24 2 58·8	25·04	21	6 8 30·17	23 50 32·4	31·89
22	4 25 30·07	24 5 29·0	23·90	22	6 10 42·28	23 47 21·1	33·08
23	4 27 39·92	N.24 7 52·4	22·76	23	6 12 54·36	N.23 44 2·6	34·27
	TUESDAY 22.				*THURSDAY 24.*		
0	4 29 49·87	N.24 10 9·0	21·61	0	6 15 6·42	N.23 40 37·0	35·46
1	4 31 59·94	24 12 18·7	20·46	1	6 17 18·46	23 37 4·2	36·65
2	4 34 10·12	24 14 21·5	19·31	2	6 19 30·47	23 33 24·3	37·84
3	4 36 20·41	24 16 17·4	18·16	3	6 21 42·44	23 29 37·2	39·03
4	4 38 30·81	24 18 6·3	17·00	4	6 23 54·39	23 25 43·0	40·22
5	4 40 41·30	24 19 48·3	15·84	5	6 26 6·30	23 21 41·7	41·40
6	4 42 51·89	24 21 23·3	14·67	6	6 28 18·17	23 17 33·3	42·58
7	4 45 2·58	24 22 51·4	13·51	7	6 30 30·00	23 13 17·9	43·76
8	4 47 13·36	24 24 12·4	12·34	8	6 32 41·79	23 8 55·3	44·94
9	4 49 24·23	24 25 26·5	11·17	9	6 34 53·54	23 4 25·7	46·12
10	4 51 35·18	24 26 33·5	9·99	10	6 37 5·24	22 59 49·0	47·29
11	4 53 46·22	24 27 33·4	8·82	11	6 39 16·90	22 55 5·3	48·46
12	4 55 57·34	24 28 26·3	7·64	12	6 41 28·50	22 50 14·5	49·62
13	4 58 8·54	24 29 12·1	6·46	13	6 43 40·05	22 45 16·8	50·79
14	5 0 19·82	24 29 50·9	5·27	14	6 45 51·55	22 40 12·0	51·95
15	5 2 31·16	24 30 22·5	4·09	15	6 48 3·00	22 35 0·3	53·11
16	5 4 42·58	24 30 47·0	2·90	16	6 50 14·39	22 29 41·6	54·27
17	5 6 54·06	24 31 4·4	1·71	17	6 52 25·71	22 24 16·0	55·42
18	5 9 5·61	24 31 14·7	0·52	18	6 54 36·98	22 18 43·5	56·57
19	5 11 17·21	24 31 17·8	0·67	19	6 56 48·19	22 13 4·1	57·72
20	5 13 28·87	24 31 13·8	1·87	20	6 58 59·34	22 7 17·8	58·86
21	5 15 40·59	24 31 2·6	3·06	21	7 1 10·42	22 1 24·6	60·00
22	5 17 52·35	24 30 44·2	4·26	22	7 3 21·43	21 55 24·6	61·14
23	5 20 4·16	24 30 18·6	5·46	23	7 5 32·38	21 49 17·8	62·27
24	5 22 16·02	N.24 29 45·9		24	7 7 43·26	N.21 43 4·2	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 25.				*SUNDAY* 27.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	7 7 43·26	N.21 43 4·2	63·40	0	8 50 57·15	N.14 39 47·7	111·87
1	7 9 54·07	21 36 43·8	64·53	1	8 53 4·53	14 28 36·5	112·73
2	7 12 4·81	21 30 16·6	65·65	2	8 55 11·87	14 17 20·1	113·59
3	7 14 15·47	21 23 42·7	66·77	3	8 57 19·16	14 5 58·5	114·44
4	7 16 26·07	21 17 2·1	67·88	4	8 59 26·41	13 54 31·9	115·28
5	7 18 36·59	21 10 14·8	68·99	5	9 1 33·61	13 43 0·2	116·11
6	7 20 47·03	21 3 20·9	70·10	6	9 3 40·78	13 31 23·6	116·93
7	7 22 57·40	20 56 20·3	71·20	7	9 5 47·92	13 19 42·0	117·75
8	7 25 7·70	20 49 13·1	72·29	8	9 7 55·02	13 7 55·5	118·56
9	7 27 17·91	20 41 59·4	73·39	9	9 10 2·09	12 56 4·1	119·36
10	7 29 28·05	20 34 39·0	74·48	10	9 12 9·13	12 44 7·9	120·15
11	7 31 38·12	20 27 12·2	75·56	11	9 14 16·15	12 32 7·0	120·94
12	7 33 48·10	20 19 38·8	76·64	12	9 16 23·14	12 20 1·3	121·72
13	7 35 58·00	20 11 59·0	77·72	13	9 18 30·11	12 7 51·0	122·49
14	7 38 7·83	20 4 12·7	78·79	14	9 20 37·06	11 55 36·1	123·25
15	7 40 17·58	19 56 19·9	79·85	15	9 22 44·00	11 43 16·6	124·01
16	7 42 27·25	19 48 20·8	80·91	16	9 24 50·93	11 30 52·5	124·75
17	7 44 36·84	19 40 15·3	81·97	17	9 26 57·84	11 18 24·0	125·49
18	7 46 46·35	19 32 3·5	83·02	18	9 29 4·75	11 5 51·1	126·21
19	7 48 55·78	19 23 45·4	84·06	19	9 31 11·66	10 53 13·8	126·93
20	7 51 5·13	19 15 21·0	85·10	20	9 33 18·56	10 40 32·2	127·64
21	7 53 14·40	19 6 50·4	86·14	21	9 35 25·46	10 27 46·3	128·35
22	7 55 23·59	18 58 13·6	87·17	22	9 37 32·37	10 14 56·2	129·04
23	7 57 32·71	N.18 49 30·5	88·20	23	9 39 39·28	N.10 2 2·0	129·72
	SATURDAY 26.				*MONDAY* 28.		
0	7 59 41·75	N.18 40 41·4	89·21	0	9 41 46·21	N. 9 49 3·7	130·40
1	8 1 50·71	18 31 46·2	90·22	1	9 43 53·15	9 36 1·3	131·06
2	8 3 59·59	18 22 44·8	91·23	2	9 46 0·11	9 22 54·9	131·72
3	8 6 8·39	18 13 37·4	92·23	3	9 48 7·09	9 9 44·6	132·37
4	8 8 17·12	18 4 24·0	93·23	4	9 50 14·09	8 56 30·4	133·01
5	8 10 25·77	17 55 4·6	94·22	5	9 52 21·12	8 43 12·4	133·63
6	8 12 34·34	17 45 39·3	95·21	6	9 54 28·18	8 29 50·6	134·25
7	8 14 42·84	17 36 8·1	96·19	7	9 56 35·27	8 16 25·0	134·86
8	8 16 51·27	17 26 31·0	97·16	8	9 58 42·40	8 2 55·8	135·46
9	8 18 59·63	17 16 48·0	98·13	9	10 0 49·57	7 49 23·1	136·05
10	8 21 7·91	17 6 59·2	99·09	10	10 2 56·79	7 35 46·8	136·63
11	8 23 16·12	16 57 4·6	100·05	11	10 5 4·05	7 22 7·0	137·20
12	8 25 24·27	16 47 4·3	101·00	12	10 7 11·36	7 8 23·8	137·76
13	8 27 32·35	16 36 58·3	101·94	13	10 9 18·73	6 54 37·3	138·31
14	8 29 40·36	16 26 46·7	102·88	14	10 11 26·16	6 40 47·4	138·84
15	8 31 48·31	16 16 29·4	103·81	15	10 13 33·65	6 26 54·3	139·37
16	8 33 56·19	16 6 6·6	104·73	16	10 15 41·20	6 12 58·1	139·89
17	8 36 4·01	15 55 38·2	105·65	17	10 17 48·82	5 58 58·8	140·39
18	8 38 11·77	15 45 4·3	106·56	18	10 19 56·52	5 44 56·4	140·89
19	8 40 19·47	15 34 24·9	107·46	19	10 22 4·30	5 30 51·1	141·37
20	8 42 27·11	15 23 40·2	108·36	20	10 24 12·16	5 16 42·9	141·84
21	8 44 34·70	15 12 50·0	109·25	21	10 26 20·10	5 2 31·8	142·30
22	8 46 42·24	15 1 54·5	110·13	22	10 28 28·13	4 48 18·0	142·75
23	8 48 49·72	14 50 53·7	111·00	23	10 30 36·25	4 34 1·5	143·19
24	8 50 57·15	N.14 39 47·7		24	10 32 44·47	N. 4 19 42·4	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 29.		
	h m s	° ′ ″	″
0	10 32 44·47	N. 4 19 42·4	143·61
1	10 34 52·79	4 5 20·7	144·03
2	10 37 1·22	3 50 56·6	144·43
3	10 39 9·76	3 36 30·0	144·82
4	10 41 18·41	3 22 1·0	145·20
5	10 43 27·17	3 7 29·8	145·56
6	10 45 36·06	2 52 56·5	145·91
7	10 47 45·07	2 38 21·0	146·25
8	10 49 54·21	2 23 43·5	146·58
9	10 52 3·49	2 9 4·0	146·89
10	10 54 12·90	1 54 22·6	147·19
11	10 56 22·45	1 39 39·5	147·48
12	10 58 32·15	1 24 54·6	147·76
13	11 0 42·00	1 10 8·0	148·02
14	11 2 52·00	0 55 19·9	148·27
15	11 5 2·16	0 40 30·3	148·50
16	11 7 12·48	0 25 39·3	148·72
17	11 9 22·97	N. 0 10 47·0	148·93
18	11 11 33·63	S. 0 4 6·6	149·12
19	11 13 44·46	0 19 1·3	149·29
20	11 15 55·47	0 33 57·1	149·45
21	11 18 6·67	0 48 53·8	149·60
22	11 20 18·06	1 3 51·4	149·73
23	11 22 29·64	S. 1 18 49·8	149·85
	WEDNESDAY 30.		
0	11 24 41·42	S. 1 33 49·0	149·95
1	11 26 53·40	1 48 48·7	150·05
2	11 29 5·58	2 3 49·0	150·12
3	11 31 17·97	2 18 49·7	150·18
4	11 33 30·57	2 33 50·8	150·22
5	11 35 43·39	2 48 52·1	150·24
6	11 37 56·43	3 3 53·6	150·25
7	11 40 9·70	3 18 55·1	150·24
8	11 42 23·19	3 33 56·5	150·22
9	11 44 36·92	3 48 57·8	150·18
10	11 46 50·89	4 3 58·9	150·12
11	11 49 5·10	4 18 59·6	150·05
12	11 51 19·55	4 33 59·9	149·95
13	11 53 34·26	4 48 59·6	149·85
14	11 55 49·22	5 3 58·7	149·72
15	11 58 4·43	5 18 57·1	149·58
16	12 0 19·91	5 33 54·6	149·42
17	12 2 35·66	5 48 51·1	149·24
18	12 4 51·67	6 3 46·5	149·05
19	12 7 7·96	6 18 40·8	148·83
20	12 9 24·52	6 33 33·8	148·60
21	12 11 41·37	6 48 25·4	148·35
22	12 13 58·50	7 3 15·5	148·08
23	12 16 15·92	7 18 4·0	147·80
24	12 18 33·63	S. 7 32 50·8	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 31.		
	h m s	° ′ ″	″
0	12 18 33·63	S. 7 32 50·8	147·49
1	12 20 51·63	7 47 35·7	147·16
2	12 23 9·93	8 2 18·7	146·82
3	12 25 28·54	8 16 59·7	146·46
4	12 27 47·45	8 31 38·4	146·08
5	12 30 6·67	8 46 14·9	145·68
6	12 32 26·20	9 0 49·0	145·26
7	12 34 46·05	9 15 20·5	144·82
8	12 37 6·22	9 29 49·4	144·36
9	12 39 26·70	9 44 15·6	143·88
10	12 41 47·51	9 58 38·8	143·38
11	12 44 8·65	10 12 59·1	142·86
12	12 46 30·12	10 27 16·3	142·32
13	12 48 51·92	10 41 30·3	141·77
14	12 51 14·06	10 55 40·9	141·20
15	12 53 36·53	11 9 48·0	140·59
16	12 55 59·34	11 23 51·5	139·97
17	12 58 22·49	11 37 51·3	139·32
18	13 0 45·99	11 51 47·3	138·67
19	13 3 9·83	12 5 39·3	137·98
20	13 5 34·02	12 19 27·2	137·28
21	13 7 58·56	12 33 10·9	136·56
22	13 10 23·45	12 46 50·2	135·82
23	13 12 48·69	S. 13 0 25·1	135·06
	FRIDAY, NOV. 1.		
0	13 15 14·29	S. 13 13 55·4	

PHASES OF THE MOON.

	d h m
● New Moon	3 18 56·3
☽ *First Quarter*	10 10 8·9
○ Full Moon	18 6 37·9
☾ *Last Quarter*	26 9 54·0

	d h
☾ Perigee	4 18
☾ Apogee	19 18

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Aldebaran W.	81 43 13	2325	83 28 36	2308	85 14 24	2290	87 0 38	2274
	Pollux W.	39 56 50	2375	41 41 1	2351	43 25 46	2328	45 11 4	2307
	Sun E.	38 32 21	2640	36 54 20	2624	35 15 58	2611	33 37 18	2598
6	Sun W.	31 34 55	2395	33 18 37	2398	35 2 14	2403	36 45 44	2410
	α Aquilæ E.	79 14 57	2580	77 35 34	2596	75 56 34	2614	74 17 58	2633
	Fomalhaut E.	104 36 39	2501	102 55 27	2502	101 14 16	2504	99 33 8	2509
7	Sun W.	45 20 32	2455	47 2 48	2466	48 44 49	2479	50 26 32	2491
	α Aquilæ E.	66 12 22	2761	64 37 3	2793	63 2 25	2827	61 28 33	2864
	Fomalhaut E.	91 9 45	2553	89 29 45	2565	87 50 1	2579	86 10 37	2593
	α Pegasi E.	111 53 20	2284	110 6 57	2293	108 20 47	2302	106 34 51	2312
8	Sun W.	58 50 30	2561	60 30 18	2577	62 9 45	2592	63 48 51	2608
	Venus W.	20 29 16	2633	22 7 26	2645	23 45 20	2658	25 22 56	2672
	α Aquilæ E.	53 52 16	3097	52 24 3	3155	50 57 0	3218	49 31 12	3286
	Fomalhaut E.	77 59 12	2686	76 22 13	2707	74 45 42	2731	73 9 43	2755
	α Pegasi E.	97 49 8	2373	96 4 54	2387	94 21 0	2401	92 37 26	2415
9	Sun W.	71 58 52	2689	73 35 46	2707	75 12 17	2723	76 48 26	2740
	Venus W.	33 26 4	2748	35 1 40	2765	36 36 54	2782	38 11 46	2798
	Antares W.	20 37 31	2371	22 21 48	2384	24 5 46	2398	25 49 24	2412
	Fomalhaut E.	65 18 15	2895	63 45 50	2928	62 14 7	2962	60 43 6	2997
	α Pegasi E.	84 5 3	2495	82 23 43	2512	80 42 47	2529	79 2 15	2546
10	Sun W.	84 43 40	2824	86 17 36	2840	87 51 12	2857	89 24 26	2874
	Venus W.	46 0 46	2880	47 33 30	2897	49 5 53	2913	50 37 55	2930
	Antares W.	34 22 28	2485	36 4 3	2500	37 45 16	2514	39 26 9	2529
	Fomalhaut E.	53 19 58	3209	51 54 0	3259	50 29 1	3313	49 5 5	3371
	α Pegasi E.	70 45 43	2638	69 7 40	2658	67 30 4	2677	65 52 53	2697
	α Arietis E.	113 24 7	2500	111 42 54	2517	110 2 3	2530	108 21 31	2545
11	Sun W.	97 5 24	2954	98 36 35	2970	100 7 26	2985	101 37 58	2999
	Venus W.	58 12 58	3009	59 43 0	3025	61 12 42	3040	62 42 5	3055
	Antares W.	47 45 30	2602	49 24 23	2616	51 2 56	2629	52 41 12	2643
	Fomalhaut E.	42 23 23	3733	41 7 11	3826	39 52 36	3928	38 39 44	4040
	α Pegasi E.	57 53 44	2801	56 19 18	2823	54 45 20	2846	53 11 52	2870
	α Arietis E.	100 3 59	2618	98 25 28	2631	96 47 15	2646	95 9 22	2659
12	Sun W.	109 6 4	3072	110 34 48	3086	112 3 15	3100	113 31 25	3112
	Venus W.	70 4 34	3126	71 32 12	3139	72 59 34	3153	74 26 40	3166
	Antares W.	60 47 57	2708	62 24 26	2720	64 0 39	2732	65 36 36	2744
	α Pegasi E.	45 32 24	3001	44 2 12	3031	42 32 38	3064	41 3 44	3097
	α Arietis E.	87 4 26	2725	85 28 19	2737	83 52 28	2750	82 16 54	2762
13	Sun W.	120 48 22	3176	122 15 0	3188	123 41 23	3199	125 7 33	3211
	Venus W.	81 38 23	3226	83 4 1	3238	84 29 25	3249	85 54 36	3259
	Antares W.	73 32 32	2800	75 7 0	2811	76 41 14	2820	78 15 16	2831
	α Arietis E.	74 22 55	2819	72 48 52	2829	71 15 2	2841	69 41 27	2850
	Aldebaran E.	107 5 32	2842	105 31 59	2853	103 58 40	2863	102 25 33	2872
14	Venus W.	92 57 28	3310	94 21 28	3319	95 45 17	3328	97 8 56	3337
	Antares W.	86 2 16	2876	87 35 5	2885	89 7 44	2894	90 40 11	2901
	α Aquilæ W.	40 37 5	4321	41 43 38	4244	42 51 23	4174	44 0 14	4111

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Day of the Month.	Star's Name and Position.	Midnight.	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
1	Aldebaran W.	88 47 16	2257	90 34 18	2241	92 21 44	2226	94 9 33	2211
	Pollux W.	46 56 53	2286	48 43 13	2267	50 30 1	2248	52 17 17	2230
	Sun E.	31 58 20	2585	30 19 5	2575	28 39 36	2567	26 59 56	2561
6	Sun W.	38 29 5	2417	40 12 16	2426	41 55 14	2434	43 38 0	2444
	α Aquilæ E.	72 39 48	2654	71 2 6	2678	69 24 57	2703	67 48 21	2731
	Fomalhaut E.	97 52 7	2515	96 11 15	2522	94 30 32	2531	92 50 2	2541
7	Sun W.	52 7 58	2504	53 49 5	2518	55 29 53	2532	57 10 21	2546
	α Aquilæ E.	59 55 28	2904	58 23 15	2947	56 51 56	2993	55 21 35	3043
	Fomalhaut E.	84 31 33	2610	82 52 51	2627	81 14 32	2646	79 36 39	2665
	α Pegasi E.	104 49 9	2323	103 3 43	2335	101 18 34	2346	99 33 42	2359
8	Sun W.	65 27 35	2624	67 5 57	2640	68 43 58	2657	70 21 36	2673
	Venus W.	27 0 14	2686	28 37 12	2701	30 13 50	2717	31 50 7	2732
	α Aquilæ E.	48 6 44	3359	46 43 41	3439	45 22 9	3527	44 2 15	3623
	Fomalhaut E.	71 34 16	2780	69 59 21	2807	68 25 2	2835	66 51 20	2864
	α Pegasi E.	90 54 13	2431	89 11 22	2446	87 28 53	2462	85 46 47	2478
9	Sun W.	78 24 13	2757	79 59 38	2774	81 34 40	2790	83 9 21	2807
	Venus W.	39 46 17	2814	41 20 27	2831	42 54 15	2848	44 27 41	2864
	Antares W.	27 32 42	2426	29 15 40	2440	30 58 17	2455	32 40 33	2470
	Fomalhaut E.	59 12 50	3035	57 43 21	3075	56 14 41	3117	54 46 52	3162
	α Pegasi E.	77 22 6	2565	75 42 23	2583	74 3 4	2601	72 24 11	2620
10	Sun W.	90 57 18	2890	92 29 50	2905	94 2 2	2922	95 33 53	2938
	Venus W.	52 9 36	2946	53 40 56	2962	55 11 57	2978	56 42 37	2993
	Antares W.	41 6 42	2544	42 46 54	2559	44 26 45	2573	46 6 17	2587
	Fomalhaut E.	47 42 15	3432	46 20 35	3499	45 0 10	3571	43 41 4	3649
	α Pegasi E.	64 16 9	2717	62 39 52	2738	61 4 2	2758	59 28 39	2779
	α Arietis E.	106 41 21	2559	105 1 30	2574	103 22 0	2589	101 42 50	2603
11	Sun W.	103 8 12	3014	104 38 7	3029	106 7 44	3044	107 37 2	3057
	Venus W.	64 11 10	3069	65 39 58	3084	67 8 27	3098	68 36 39	3112
	Antares W.	54 19 8	2656	55 56 47	2670	57 34 7	2682	59 11 11	2695
	Fomalhaut E.	37 28 44	4163	36 19 43	4301	35 12 51	4454	34 8 18	4625
	α Pegasi E.	51 38 54	2894	50 6 27	2919	48 34 33	2945	47 3 11	2973
	α Arietis E.	93 31 47	2672	91 54 30	2686	90 17 31	2699	88 40 50	2712
12	Sun W.	114 59 20	3126	116 26 58	3138	117 54 21	3151	119 21 29	3163
	Venus W.	75 53 30	3178	77 20 5	3191	78 46 25	3203	80 12 31	3214
	Antares W.	67 12 17	2756	68 47 43	2768	70 22 53	2778	71 57 50	2789
	α Pegasi E.	39 35 31	3133	38 8 2	3173	36 41 21	3216	35 15 31	3263
	α Arietis E.	80 41 36	2773	79 6 33	2785	77 31 45	2797	75 57 13	2808
13	Sun W.	126 33 29	3223	127 59 11	3234	129 24 40	3245	130 49 56	3256
	Venus W.	87 19 35	3270	88 44 21	3281	90 8 55	3291	91 33 17	3301
	Antares W.	79 49 4	2840	81 22 40	2849	82 56 4	2859	84 29 16	2868
	α Arietis E.	68 8 4	2861	66 34 55	2871	65 1 59	2881	63 29 16	2891
	Aldebaran E.	100 52 38	2881	99 19 55	2890	97 47 23	2899	96 15 3	2907
14	Venus W.	98 32 24	3345	99 55 43	3354	101 18 52	3362	102 41 52	3370
	Antares W.	92 12 29	2909	93 44 37	2916	95 16 35	2924	96 48 23	2931
	α Aquilæ W.	45 10 5	4055	46 20 50	4005	47 32 25	3959	48 44 45	3918

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
14	α Arietis E.	61 56 45	2900	60 24 26	2909	58 52 18	2919	57 20 23	2928
	Aldebaran E.	94 42 53	2916	93 10 55	2924	91 39 7	2932	90 7 29	2941
15	Venus W.	104 4 43	3377	105 27 26	3385	106 50 0	3392	108 12 26	3399
	Antares W.	98 20 2	2938	99 51 33	2945	101 22 55	2951	102 54 9	2958
	α Aquilæ W.	49 57 47	3882	51 11 25	3848	52 25 38	3818	53 40 22	3791
	α Arietis E.	49 43 33	2971	48 12 44	2980	46 42 6	2988	45 11 38	2996
	Aldebaran E.	82 31 49	2978	81 1 9	2985	79 30 38	2993	78 0 16	2999
16	α Aquilæ W.	60 0 16	3689	61 17 15	3674	62 34 30	3661	63 51 59	3648
	Fomalhaut W.	36 32 14	4478	37 36 25	4384	38 42 1	4298	39 48 55	4222
	α Arietis E.	37 41 59	3040	36 12 36	3051	34 43 26	3060	33 14 27	3070
	Aldebaran E.	70 30 28	3031	69 0 54	3038	67 31 28	3044	66 2 10	3050
	Pollux E.	112 24 7	3029	110 54 30	3034	109 24 59	3040	107 55 36	3044
17	α Aquilæ W.	70 22 18	3603	71 40 49	3598	72 59 26	3592	74 18 9	3588
	Fomalhaut W.	45 39 5	3946	46 51 39	3905	48 4 54	3869	49 18 45	3836
	α Pegasi W.	23 5 54	4107	24 15 49	3991	25 27 38	3894	26 41 4	3812
	Aldebaran E.	58 37 29	3080	57 8 55	3086	55 40 28	3092	54 12 8	3098
	Pollux E.	100 29 54	3064	99 1 0	3067	97 32 10	3071	96 3 25	3074
18	α Aquilæ W.	80 52 45	3574	82 11 48	3573	83 30 52	3572	84 49 57	3572
	Fomalhaut W.	55 35 39	3709	56 52 17	3690	58 9 15	3672	59 26 32	3656
	α Pegasi W.	33 5 54	3547	34 25 26	3514	35 45 35	3484	37 6 17	3458
	Aldebaran E.	46 52 22	3129	45 24 48	3137	43 57 23	3144	42 30 7	3152
	Pollux E.	88 40 40	3091	87 12 19	3093	85 44 1	3096	84 15 46	3099
19	α Aquilæ W.	91 25 11	3578	92 44 9	3582	94 3 3	3585	95 21 54	3588
	Fomalhaut W.	65 56 48	3593	67 15 30	3584	68 34 22	3575	69 53 24	3566
	α Pegasi W.	43 56 6	3365	45 19 3	3351	46 42 16	3339	48 5 42	3328
	Aldebaran E.	35 16 14	3198	33 50 3	3210	32 24 6	3224	30 58 25	3239
	Pollux E.	76 55 20	3111	75 27 24	3113	73 59 30	3115	72 31 39	3117
20	α Aquilæ W.	101 55 1	3613	103 13 21	3620	104 31 34	3627	105 49 39	3634
	Fomalhaut W.	76 30 35	3534	77 50 22	3529	79 10 14	3525	80 30 11	3521
	α Pegasi W.	55 5 46	3284	56 30 16	3277	57 54 55	3271	59 19 41	3264
	Pollux E.	65 12 55	3125	63 45 16	3126	62 17 38	3128	60 50 2	3129
	Regulus E.	102 0 45	3087	100 32 19	3087	99 3 54	3087	97 35 28	3087
	Jupiter E.	122 9 54	3175	120 43 15	3175	119 16 36	3173	117 49 55	3172
	Saturn E.	122 10 46	3153	120 43 46	3152	119 16 33	3151	117 49 25	3150
21	Fomalhaut W.	87 10 57	3504	88 31 17	3503	89 51 38	3500	91 12 2	3498
	α Pegasi W.	66 25 18	3236	67 50 45	3230	69 16 18	3225	70 41 58	3220
	α Arietis W.	22 47 57	3199	24 14 7	3183	25 40 36	3169	27 7 22	3157
	Pollux E.	53 32 24	3134	52 4 56	3135	50 37 29	3136	49 10 3	3138
	Regulus E.	90 13 6	3082	88 44 34	3079	87 15 59	3077	85 47 21	3075
	Saturn E.	110 33 16	3140	109 5 55	3138	107 38 31	3136	106 11 5	3133
	Jupiter E.	110 36 4	3164	109 9 12	3161	107 42 16	3159	106 15 18	3157
22	Fomalhaut W.	97 54 24	3494	99 14 55	3494	100 35 26	3494	101 55 57	3495
	α Pegasi W.	77 51 49	3193	79 18 6	3188	80 44 29	3183	82 10 59	3177
	α Arietis W.	34 24 29	3108	35 52 29	3100	37 20 38	3092	38 48 57	3084
	Pollux E.	41 53 17	3144	40 26 1	3147	38 58 48	3149	37 31 38	3153
	Regulus E.	78 23 28	3060	76 54 29	3056	75 25 26	3052	73 56 18	3048

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Day of the Month.	Star's Name and Position.	*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
14	α Arietis E.	55 48 39	2936	54 17 6	2945	52 45 44	2954	51 14 33	2962
	Aldebaran E.	88 36 2	2949	87 4 45	2956	85 33 37	2964	84 2 39	2970
15	Venus W.	109 34 44	3406	110 56 54	3412	112 18 57	3418	113 40 53	3424
	Antares W.	104 25 14	2964	105 56 12	2970	107 27 3	2976	108 57 46	2981
	α Aquilæ W.	54 55 33	3766	56 11 11	3744	57 27 12	3724	58 43 34	3705
	α Arietis E.	43 41 20	3005	42 11 14	3014	40 41 18	3022	39 11 33	3031
	Aldebaran E.	76 30 2	3006	74 59 56	3013	73 29 59	3019	72 0 9	3026
16	α Aquilæ W.	65 9 42	3637	66 27 36	3627	67 45 41	3619	69 3 55	3611
	Fomalhaut W.	40 57 0	4155	42 6 9	4095	43 16 16	4040	44 27 16	3990
	α Arietis E.	31 45 41	3082	30 17 9	3094	28 48 52	3106	27 20 50	3120
	Aldebaran E.	64 32 59	3056	63 3 56	3062	61 35 0	3068	60 6 11	3074
	Pollux E.	106 26 18	3048	104 57 5	3052	103 27 56	3056	101 58 53	3060
17	α Aquilæ W.	75 36 57	3584	76 55 49	3580	78 14 45	3577	79 33 44	3575
	Fomalhaut W.	50 33 10	3805	51 48 7	3777	53 3 33	3753	54 19 24	3730
	α Pegasi W.	27 55 54	3742	29 11 57	3682	30 29 3	3630	31 47 5	3586
	Aldebaran E.	52 43 56	3104	51 15 51	3110	49 47 54	3116	48 20 4	3123
	Pollux E.	94 34 44	3078	93 6 7	3081	91 37 34	3084	90 9 5	3087
18	α Aquilæ W.	86 9 2	3573	87 28 6	3574	88 47 9	3575	90 6 11	3576
	Fomalhaut W.	60 44 6	3641	62 1 56	3628	63 20 0	3615	64 38 18	3604
	α Pegasi W.	38 27 28	3435	39 49 5	3415	41 11 5	3396	42 33 26	3379
	Aldebaran E.	41 3 0	3159	39 36 2	3168	38 9 15	3177	36 42 39	3187
	Pollux E.	82 47 35	3101	81 19 27	3104	79 51 22	3106	78 23 20	3108
19	α Aquilæ W.	96 40 41	3592	97 59 24	3597	99 18 2	3602	100 36 34	3607
	Fomalhaut W.	71 12 35	3559	72 31 54	3552	73 51 21	3545	75 10 55	3540
	α Pegasi W.	49 29 21	3318	50 53 12	3309	52 17 13	3300	53 41 25	3292
	Aldebaran E.	29 33 2	3256	28 7 59	3275	26 43 18	3298	25 19 4	3324
	Pollux E.	71 3 50	3119	69 36 3	3120	68 8 18	3123	66 40 36	3124
20	α Aquilæ W.	107 7 37	3643	108 25 25	3652	109 43 3	3662	111 0 31	3672
	Fomalhaut W.	81 50 12	3516	83 10 18	3513	84 30 28	3510	85 50 41	3507
	α Pegasi W.	60 44 35	3258	62 9 35	3252	63 34 43	3247	64 59 57	3241
	Pollux E.	59 22 28	3130	57 54 55	3131	56 27 23	3133	54 59 53	3134
	Regulus E.	96 7 2	3086	94 38 35	3085	93 10 7	3083	91 41 37	3083
	Jupiter E.	116 23 12	3171	114 56 28	3169	113 29 42	3167	112 2 54	3166
	Saturn E.	116 22 16	3148	114 55 4	3146	113 27 50	3144	112 0 34	3143
21	Fomalhaut W.	92 32 28	3497	93 52 55	3496	95 13 24	3495	96 33 54	3495
	α Pegasi W.	72 7 43	3214	73 33 35	3209	74 59 34	3204	76 25 38	3198
	α Arietis W.	28 34 22	3146	30 1 36	3136	31 29 2	3126	32 56 40	3117
	Pollux E.	47 42 39	3138	46 15 16	3140	44 47 55	3141	43 20 35	3143
	Regulus E.	84 18 41	3073	82 49 58	3070	81 21 12	3067	79 52 22	3064
	Saturn E.	104 43 35	3129	103 16 1	3126	101 48 23	3123	100 20 41	3119
	Jupiter E.	104 48 17	3153	103 21 12	3150	101 54 3	3147	100 26 50	3143
22	Fomalhaut W.	103 16 27	3495	104 36 57	3496	105 57 25	3498	107 17 51	3500
	α Pegasi W.	83 37 36	3171	85 4 20	3165	86 31 11	3159	87 58 9	3153
	α Arietis W.	40 17 26	3076	41 46 5	3068	43 14 54	3060	44 43 52	3052
	Pollux E.	36 4 32	3157	34 37 31	3161	33 10 35	3167	31 43 47	3174
	Regulus E.	72 27 5	3043	70 57 45	3038	69 28 20	3033	67 58 48	3027

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		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
22	Saturn E.	98 52 55	3115	97 25 3	3111	95 57 7	3106	94 29 5	3102
	Jupiter E.	98 59 33	3139	97 32 11	3134	96 4 43	3130	94 37 10	3126
23	α Pegasi W.	89 25 15	3147	90 52 28	3140	92 19 49	3134	93 47 18	3127
	α Arietis W.	46 13 0	3044	47 42 18	3035	49 11 47	3027	50 41 26	3018
	Aldebaran W.	15 8 48	3644	16 26 35	3533	17 46 23	3445	19 7 48	3374
	Regulus E.	66 29 9	3022	64 59 23	3015	63 29 29	3009	61 59 28	3002
	Saturn E.	87 7 22	3073	85 38 40	3067	84 9 50	3060	82 40 52	3053
	Jupiter E.	87 17 53	3097	85 49 40	3091	84 21 19	3083	82 52 49	3077
	Sun E.	128 38 48	3408	127 16 40	3400	125 54 23	3390	124 31 55	3381
24	α Pegasi W.	101 6 52	3091	102 35 13	3083	104 3 44	3074	105 32 25	3067
	α Arietis W.	58 12 31	2971	59 43 20	2960	61 14 23	2950	62 45 38	2939
	Aldebaran W.	26 11 27	3153	27 38 33	3123	29 6 14	3096	30 34 29	3071
	Regulus E.	54 27 4	2964	52 56 6	2954	51 24 56	2946	49 53 36	2936
	Saturn E.	75 13 40	3013	73 43 43	3003	72 13 34	2994	70 43 14	2985
	Jupiter E.	75 28 0	3035	73 58 30	3026	72 28 50	3016	70 58 57	3006
	Sun E.	117 37 4	3333	116 13 31	3323	114 49 46	3312	113 25 48	3300
25	α Arietis W.	70 25 31	2880	71 58 16	2867	73 31 17	2854	75 4 35	2841
	Aldebaran W.	38 2 49	2964	39 33 47	2946	41 5 8	2926	42 36 54	2908
	Regulus E.	42 13 52	2887	40 41 17	2876	39 8 28	2866	37 35 26	2856
	Saturn E.	63 8 23	2931	61 36 44	2920	60 4 51	2909	58 32 43	2896
	Jupiter E.	63 26 21	2952	61 55 8	2940	60 23 40	2928	58 51 57	2915
	Sun E.	106 22 29	3237	104 57 4	3224	103 31 23	3209	102 5 24	3195
26	α Arietis W.	82 55 35	2769	84 30 44	2753	86 6 13	2738	87 42 3	2722
	Aldebaran W.	50 21 33	2816	51 55 40	2799	53 30 9	2780	55 5 3	2763
	Regulus E.	29 46 51	2804	28 12 29	2795	26 37 55	2787	25 3 10	2781
	Saturn E.	50 48 7	2835	49 14 24	2821	47 40 23	2808	46 6 6	2796
	Jupiter E.	51 9 19	2851	49 35 57	2837	48 2 17	2824	46 28 20	2809
	Sun E.	94 51 6	3117	93 23 17	3101	91 55 9	3083	90 26 39	3067
27	Aldebaran W.	63 5 33	2670	64 42 53	2651	66 20 39	2632	67 58 50	2614
	Pollux W.	21 57 4	2917	23 29 1	2863	25 2 7	2815	26 36 16	2772
	Saturn E.	38 10 32	2735	36 34 38	2723	34 58 28	2713	33 22 6	2703
	Jupiter E.	38 34 4	2743	36 58 21	2729	35 22 20	2717	33 46 3	2705
	Sun E.	82 58 48	2977	81 28 6	2958	79 57 0	2939	78 25 31	2920
28	Aldebaran W.	76 16 14	2518	77 57 2	2499	79 38 16	2480	81 19 58	2461
	Pollux W.	34 39 42	2602	36 18 35	2574	37 58 6	2546	39 38 15	2520
	Sun E.	70 41 55	2822	69 7 56	2802	67 33 31	2783	65 58 41	2763
29	Aldebaran W.	89 55 6	2368	91 39 27	2349	93 24 15	2331	95 9 30	2314
	Pollux W.	48 7 46	2401	49 51 20	2378	51 35 26	2357	53 20 2	2336
	Sun E.	57 57 58	2665	56 20 31	2646	54 42 39	2627	53 4 21	2609
30	Aldebaran W.	104 2 1	2230	105 49 44	2214	107 37 51	2199	109 26 20	2184
	Pollux W.	62 10 29	2239	63 57 59	2221	65 45 56	2204	67 34 18	2186
	Regulus W.	25 9 26	2254	26 56 33	2230	28 44 16	2208	30 32 32	2186
	Sun E.	44 46 41	2522	43 5 58	2505	41 24 52	2491	39 43 26	2476
31	Pollux W.	76 42 13	2112	78 32 54	2099	80 23 55	2087	82 15 15	2075
	Regulus W.	39 41 14	2098	41 32 16	2084	43 23 40	2070	45 15 25	2057
	Sun E.	31 11 28	2416	29 28 16	2409	27 44 54	2402	26 1 22	2398

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
22	Saturn	E.	93 0 58	3096	91 32 44	3091	90 4 24	3086	88 35 57	3079
	Jupiter	E.	93 9 32	3120	91 41 47	3115	90 13 56	3110	88 45 58	3104
23	α Pegasi	W.	95 14 55	3119	96 42 42	3113	98 10 36	3105	99 38 39	3097
	α Arietis	W.	52 11 16	3009	53 41 17	3000	55 11 30	2990	56 41 55	2981
	Aldebaran	W.	20 30 34	3315	21 54 28	3265	23 19 20	3223	24 45 2	3187
	Regulus	E.	60 29 18	2995	58 58 59	2987	57 28 30	2980	55 57 52	2972
	Saturn	E.	81 11 45	3045	79 42 28	3038	78 13 2	3030	76 43 26	3022
	Jupiter	E.	81 24 11	3069	79 55 23	3061	78 26 26	3052	76 57 18	3044
	Sun	E.	123 9 18	3373	121 46 31	3364	120 23 33	3354	119 0 24	3344
24	α Pegasi	W.	107 1 15	3059	108 30 15	3050	109 59 26	3043	111 28 46	3034
	α Arietis	W.	64 17 7	2927	65 48 51	2916	67 20 49	2905	68 53 2	2892
	Aldebaran	W.	32 3 14	3048	33 32 27	3025	35 2 9	3005	36 32 16	2984
	Regulus	E.	48 22 3	2927	46 50 19	2918	45 18 23	2908	43 46 14	2898
	Saturn	E.	69 12 42	2974	67 41 57	2964	66 10 59	2954	64 39 48	2943
	Jupiter	E.	69 28 52	2996	67 58 35	2985	66 28 4	2974	64 57 19	2964
	Sun	E.	112 1 37	3288	110 37 12	3276	109 12 33	3263	107 47 38	3251
25	α Arietis	W.	76 38 10	2827	78 12 3	2812	79 46 15	2798	81 20 45	2783
	Aldebaran	W.	44 9 3	2889	45 41 36	2871	47 14 32	2853	48 47 51	2835
	Regulus	E.	36 2 10	2845	34 28 41	2835	32 54 58	2824	31 21 1	2814
	Saturn	E.	57 0 19	2884	55 27 40	2872	53 54 45	2859	52 21 34	2847
	Jupiter	E.	57 19 58	2903	55 47 43	2890	54 15 12	2877	52 42 24	2864
	Sun	E.	100 39 9	3180	99 12 36	3165	97 45 45	3149	96 18 35	3133
26	α Arietis	W.	89 18 14	2706	90 54 46	2689	92 31 41	2673	94 8 57	2656
	Aldebaran	W.	56 40 20	2744	58 16 1	2725	59 52 7	2707	61 28 38	2689
	Regulus	E.	23 28 17	2775	21 53 16	2772	20 18 12	2773	18 43 9	2778
	Saturn	E.	44 31 33	2782	42 56 42	2770	41 21 35	2757	39 46 11	2746
	Jupiter	E.	44 54 4	2796	43 19 31	2782	41 44 40	2769	40 9 31	2755
	Sun	E.	88 57 49	3049	87 28 37	3031	85 59 3	3013	84 29 7	2995
27	Aldebaran	W.	69 37 26	2594	71 16 29	2575	72 55 58	2556	74 35 53	2538
	Pollux	W.	28 11 20	2732	29 47 17	2697	31 24 1	2664	33 1 30	2632
	Saturn	E.	31 45 30	2696	30 8 45	2689	28 31 51	2685	26 54 51	2684
	Jupiter	E.	32 9 30	2695	30 32 43	2686	28 55 44	2678	27 18 34	2672
	Sun	E.	76 53 37	2901	75 21 19	2881	73 48 36	2862	72 15 28	2842
28	Aldebaran	W.	83 2 6	2442	84 44 41	2424	86 27 42	2404	88 11 11	2386
	Pollux	W.	41 19 0	2495	43 0 21	2470	44 42 16	2446	46 24 45	2424
	Sun	E.	64 23 24	2744	62 47 42	2723	61 11 33	2704	59 34 58	2685
29	Aldebaran	W.	96 55 9	2296	98 41 15	2279	100 27 46	2262	102 14 41	2245
	Pollux	W.	55 5 9	2315	56 50 46	2296	58 36 52	2276	60 23 27	2257
	Sun	E.	51 25 38	2590	49 46 30	2572	48 6 57	2556	46 27 1	2538
30	Aldebaran	W.	111 15 11	2171	113 4 23	2158	114 53 54	2145	116 43 45	2133
	Pollux	W.	69 23 6	2170	71 12 18	2155	73 1 54	2140	74 51 52	2125
	Regulus	W.	32 21 20	2166	34 10 38	2148	36 0 24	2130	37 50 37	2114
	Sun	E.	38 1 39	2462	36 19 32	2449	34 37 7	2437	32 54 25	2426
31	Pollux	W.	84 6 53	2064	85 58 48	2054	87 50 58	2045	89 43 22	2036
	Regulus	W.	47 7 30	2045	48 59 54	2034	50 52 35	2024	52 45 32	2014
	Sun	E.	24 17 45	2396	22 34 4	2398	20 50 26	2403	19 6 55	2414

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Day of the Month.	Airy's Day Numbers—For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of E	F	G	H	Value of L
1	1·63885	1·44901	0·35820	1·36099	39·425
2	1·63833	1·45434	0·35857	1·36127	39·004
3	1·63775	1·45959	0·35894	1·36156	38·590
4	1·63713	1·46476	0·35932	1·36185	38·183
5	1·63645	1·46986	0·35970	1·36216	37·783
6	1·63571	1.47489	0·36008	1·36248	37·390
7	1·63490	1·47983	0·36046	1·36280	37·004
8	1·63405	1·48470	0·36085	1·36314	36·625
9	1·63314	1·48949	0·36124	1·36349	36·252
10	1·63216	1·49422	0·36164	1·36384	35·887
11	1·63114	1·49886	0·36203	1·36420	35·530
12	1·63006	1·50344	0·36243	1·36458	35·180
13	1·62892	1·50794	0·36283	1·36498	34·837
14	1·62773	1·51237	0·36323	1·36538	34·501
15	1·62647	1·51673	0·36364	1·36579	34·174
16	1·62516	1·52102	0·36405	1·36620	33·854
17	1·62379	1·52523	0·36447	1·36663	33·544
18	1·62236	1·52938	0·36488	1·36706	33·241
19	1·62086	1·53345	0·36530	1·36750	32·947
20	1·61933	1·53745	0·36573	1·36794	32·661
21	1·61773	1·54138	0·36616	1·36839	32·382
22	1·61606	1·54524	0·36659	1·36884	32·112
23	1·61435	1·54903	0·36703	1·36930	31·850
24	1·61256	1·55276	0·36747	1·36977	31·597
25	1·61071	1·55641	0·36792	1·37025	31·351
26	1·60882	1·56000	0·36838	1·37073	31·114
27	1·60686	1·56352	0·36884	1·37122	30·886
28	1·60482	1·56697	0·36930	1·37171	30·667
29	1·60274	1·57036	0·36977	1·37220	30·457
30	1·60059	1·57367	0·37024	1·37270	30·257
31	1·59837	1·57692	0·37072	1·37320	30·065
32	1·59611	1·58010	0·37120	1·37370	29·882

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Day of the Month.	Bessel's Day Numbers— For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of A	B	C	D	Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding $0^d.965193$. Days.	From Mean Noon of January 1. Day of the Year.	Fraction of the Year.*
					h m s			
1	+1·2680	+0·4941	+0·0340	−0·3094	11 17 20·77	192	273	·7474
2	1·2668	0·5399	0·0348	0·3063	11 13 24·86	193	274	·7502
3	1·2654	0·5812	0·0356	0·3031	11 9 28·95	194	275	·7529
4	+1·2640	+0·6189	+0·0364	−0·2997	11 5 33·05	195	276	·7557
5	1·2623	0·6535	0·0372	0·2961	11 1 37·14	196	277	·7584
6	1·2606	0·6854	0·0380	0·2924	10 57 41·23	197	278	·7611
7	+1·2587	+0·7150	+0·0388	−0·2885	10 53 45·32	198	279	·7639
8	1·2566	0·7426	0·0396	0·2845	10 49 49·42	199	280	·7667
9	1·2545	0·7684	0·0404	0·2803	10 45 53·51	200	281	·7694
10	+1·2522	+0·7927	+0·0412	−0·2759	10 41 57·60	201	282	·7721
11	1·2497	0·8156	0·0420	0·2714	10 38 1·69	202	283	·7748
12	1·2471	0·8373	0·0429	0·2666	10 34 5·79	203	284	·7776
13	+1·2443	+0·8577	+0·0437	−0·2618	10 30 9·88	204	285	·7803
14	1·2414	0·8772	0·0445	0·2567	10 26 13·97	205	286	·7830
15	1·2384	0·8957	0·0454	0·2514	10 22 18·06	206	287	·7858
16	+1·2352	+0·9133	+0·0462	−0·2460	10 18 22·16	207	288	·7885
17	1·2318	0·9302	0·0471	0·2404	10 14 26·25	208	289	·7913
18	1·2282	0·9462	0·0480	0·2346	10 10 30·34	209	290	·7940
19	+1·2245	+0·9616	+0·0488	−0·2286	10 6 34·43	210	291	·7967
20	1·2207	0·9764	0·0497	0·2224	10 2 38·53	211	292	·7995
21	1·2167	0·9905	0·0506	0·2160	9 58 42·62	212	293	·8022
22	+1·2125	+1·0041	+0·0515	−0·2095	9 54 46·71	213	294	·8049
23	1·2081	1·0171	0·0524	0·2027	9 50 50·80	214	295	·8077
24	1·2035	1·0297	0·0533	0·1958	9 46 54·89	215	296	·8104
25	+1·1988	+1·0418	+0·0543	−0·1886	9 42 58·98	216	297	·8132
26	1·1938	1·0534	0·0552	0·1812	9 39 3·08	217	298	·8159
27	1·1887	1·0646	0·0561	0·1736	9 35 7·17	218	299	·8186
28	+1·1834	+1·0754	+0·0571	−0·1659	9 31 11·26	219	300	·8214
29	1·1779	1·0858	0·0580	0·1579	9 27 15·35	220	301	·8241
30	1·1721	1·0958	0·0590	0·1497	9 23 19·44	221	302	·8268
31	1·1662	1·1055	0·0600	0·1412	9 19 23·53	222	303	·8296
32	+1·1600	+1·1149	+0·0610	−0·1326	9 15 27·62	223	304	·8323

* Add ·0031 if Fraction be required for the time t, see page 327.

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AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 hour.	THE SUN'S Apparent Declination.	Diff. for 1 hour.	Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, *to be subtracted from Apparent Time.*	Diff. for 1 hour.
		h m s	s	° ′ ″	″	m s	m s	s
Frid.	1	14 26 40·97	9·829	S. 14 31 44·2	47·70	1 6·98	16 17·48	0·028
Sat.	2	14 30 36·86	9·864	14 50 49·1	47·10	1 7·09	16 18·14	0·006
Sun.	3	14 34 33·57	9·898	15 9 39·6	46·48	1 7·20	16 17·99	0·041
Mon.	4	14 38 31·11	9·931	15 28 15·0	45·84	1 7·32	16 17·01	0·074
Tues.	5	14 42 29·46	9·965	15 46 35·1	45·18	1 7·44	16 15·22	0·108
Wed.	6	14 46 28·63	10·000	16 4 39·3	44·50	1 7·56	16 12·62	0·143
Thur.	7	14 50 28·63	10·034	16 22 27·4	43·81	1 7·67	16 9·19	0·178
Frid.	8	14 54 29·45	10·069	16 39 58·9	43·10	1 7·79	16 4·93	0·212
Sat.	9	14 58 31·11	10·103	16 57 13·4	42·38	1 7·91	15 59·84	0·246
Sun.	10	15 2 33·59	10·138	17 14 10·5	41·64	1 8·03	15 53·93	0·280
Mon.	11	15 6 36·91	10·173	17 30 49·7	40·88	1 8·15	15 47·18	0·315
Tues.	12	15 10 41·06	10·208	17 47 10·8	40·11	1 8·27	15 39·61	0·350
Wed.	13	15 14 46·04	10·242	18 3 13·3	39·32	1 8·39	15 31·21	0·385
Thur.	14	15 18 51·85	10·277	18 18 56·9	38·51	1 8·51	15 21·98	0·420
Frid.	15	15 22 58·50	10·312	18 34 21·1	37·69	1 8·63	15 11·91	0·454
Sat.	16	15 27 5·99	10·347	18 49 25·6	36·85	1 8·76	15 1·01	0·489
Sun.	17	15 31 14·32	10·381	19 4 10·0	36·00	1 8·87	14 49·27	0·524
Mon.	18	15 35 23·47	10·416	19 18 34·1	35·13	1 8·98	14 36·70	0·558
Tues.	19	15 39 33·46	10·451	19 32 37·3	34·25	1 9·10	14 23·30	0·592
Wed.	20	15 43 44·28	10·485	19 46 19·3	33·35	1 9·21	14 9·09	0·626
Thur.	21	15 47 55·91	10·519	19 59 39·7	32·44	1 9·32	13 54·05	0·660
Frid.	22	15 52 8·37	10·553	20 12 38·2	31·51	1 9·43	13 38·20	0·694
Sat.	23	15 56 21·63	10·586	20 25 14·4	30·57	1 9·54	13 21·53	0·728
Sun.	24	16 0 35·69	10·619	20 37 28·0	29·61	1 9·64	13 4·07	0·760
Mon.	25	16 4 50·54	10·651	20 49 18·7	28·64	1 9·74	12 45·83	0·792
Tues.	26	16 9 6·16	10·682	21 0 46·0	27·65	1 9·84	12 26·82	0·823
Wed.	27	16 13 22·53	10·713	21 11 49·6	26·65	1 9·94	12 7·06	0·854
Thur.	28	16 17 39·64	10·742	21 22 29·2	25·63	1 10·04	11 46·57	0·884
Frid.	29	16 21 57·46	10·771	21 32 44·5	24·61	1 10·14	11 25·36	0·913
Sat.	30	16 26 15·97	10·800	21 42 35·2	23·58	1 10·23	11 3·46	0·940
Sun.	31	16 30 35·16		S. 21 52 1·0		1 10·32	10 40·90	

* *Mean* Time of the Semidiameter passing may be found by subtracting 0ˢ·19 from the *Sidereal* Time.

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AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S *Apparent* Right Ascension.	THE SUN'S *Apparent* Declination.	Semidiam.*	Equation of Time, *to be added to Mean Time.*	Sidereal Time.
		h m s	° ′ ″	′ ″	m s	h m s
Frid.	1	14 26 43·64	S. 14 31 57·2	16 9·8	16 17·49	14 43 1·13
Sat.	2	14 30 39·54	14 51 1·9	16 10·0	16 18·14	14 46 57·68
Sun.	3	14 34 36·26	15 9 52·2	16 10·3	16 17·98	14 50 54·24
Mon.	4	14 38 33·80	15 28 27·4	16 10·5	16 16·99	14 54 50·79
Tues.	5	14 42 32·16	15 46 47·3	16 10·8	16 15·19	14 58 47·35
Wed.	6	14 46 31·33	16 4 51·3	16 11·0	16 12·58	15 2 43·91
Thur.	7	14 50 31·33	16 22 39·2	16 11·3	16 9·13	15 6 40·46
Frid.	8	14 54 32·15	16 40 10·4	16 11·5	16 4·87	15 10 37·02
Sat.	9	14 58 33·80	16 57 24·7	16 11·7	15 59·77	15 14 33·57
Sun.	10	15 2 36·28	17 14 21·5	16 11·9	15 53·85	15 18 30·13
Mon.	11	15 6 39·59	17 31 0·5	16 12·2	15 47·09	15 22 26·68
Tues.	12	15 10 43·72	17 47 21·3	16 12·4	15 39·52	15 26 23·24
Wed.	13	15 14 48·68	18 3 23·5	16 12·6	15 31·11	15 30 19·79
Thur.	14	15 18 54·48	18 19 6·7	16 12·8	15 21·87	15 34 16·35
Frid.	15	15 23 1·11	18 34 30·6	16 13·0	15 11·80	15 38 12·91
Sat.	16	15 27 8·58	18 49 34·8	16 13·3	15 0·89	15 42 9·46
Sun.	17	15 31 16·88	19 4 18·9	16 13·5	14 49·14	15 46 6·02
Mon.	18	15 35 26·01	19 18 42·6	16 13·7	14 36·57	15 50 2·58
Tues.	19	15 39 35·97	19 32 45·5	16 13·9	14 23·16	15 53 59·13
Wed.	20	15 43 46·75	19 46 27·1	16 14·0	14 8·94	15 57 55·69
Thur.	21	15 47 58·35	19 59 47·2	16 14·2	13 53·90	16 1 52·25
Frid.	22	15 52 10·77	20 12 45·3	16 14·4	13 38·04	16 5 48·80
Sat.	23	15 56 23·99	20 25 21·2	16 14·6	13 21·37	16 9 45·36
Sun.	24	16 0 38·01	20 37 34·5	16 14·8	13 3·91	16 13 41·92
Mon.	25	16 4 52·81	20 49 24·9	16 15·0	12 45·66	16 17 38·47
Tues.	26	16 9 8·38	21 0 51·8	16 15·1	12 26·65	16 21 35·03
Wed.	27	16 13 24·70	21 11 55·1	16 15·3	12 6·89	16 25 31·59
Thur.	28	16 17 41·75	21 22 34·3	16 15·4	11 46·40	16 29 28·15
Frid.	29	16 21 59·51	21 32 49·3	16 15·6	11 25·19	16 33 24·70
Sat.	30	16 26 17·97	21 42 39·6	16 15·7	11 3·29	16 37 21·26
Sun.	31	16 30 37·09	S. 21 52 5·0	16 15·9	10 40·73	16 41 17·82

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

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MEAN TIME.

Day of the Month.	THE SUN'S Apparent Longitude. Noon.	THE SUN'S Apparent Latitude. Noon.	Logarithm of the Radius Vector of the Earth. Noon.	THE MOON'S Semidiameter. Noon.	THE MOON'S Semidiameter. Midnight.	THE MOON'S Horizontal Parallax. Noon.	THE MOON'S Horizontal Parallax. Midnight.
	° ′ ″	″		′ ″	′ ″	′ ″	′ ″
1	239 4 34·9	S. 0·60	9·9964222	16 43·0	16 45·6	61 12·4	61 22·1
2	220 4 44·1	0·55	9·9963124	16 46·9	16 46·8	61 26·9	61 26·4
3	221 4 55·2	0·48	9·9962031	16 45·3	16 42·4	61 20·9	61 10·3
4	222 5 8·1	0·39	9·9960944	16 38·3	16 33·1	60 55·3	60 36·1
5	223 5 22·7	0·27	9·9959861	16 27·0	16 20·1	60 13·7	59 48·5
6	224 5 38·8	0·14	9·9958784	16 12·7	16 5·0	59 21·4	58 53·2
7	225 5 56·5	S. 0·01	9·99577715	15 57·1	15 49·3	58 24·3	57 55·7
8	226 6 15·7	N. 0·11	9·9956656	15 41·6	15 34·2	57 27·5	57 0·6
9	227 6 36·3	0·22	9·9955607	15 27·2	15 20·7	56 34·9	56 11·1
10	228 6 58·4	0·32	9·9954570	15 14·7	15 9·2	55 49·1	55 29·1
11	229 7 21·9	0·39	9·9953547	15 4·3	15 0·0	55 11·2	54 55·4
12	230 7 46·7	0·44	9·9952539	14 56·3	14 53·1	54 41·7	54 29·9
13	231 8 12·9	0·45	9·9951548	14 50·4	14 48·3	54 20·2	54 12·3
14	232 8 40·4	0·44	9·9950576	14 46·6	14 45·3	54 6·1	54 1·6
15	233 9 9·3	0·39	9·9949622	14 44·5	14 44·2	53 58·7	53 57·3
16	234 9 39·7	0·33	9·9948688	14 44·2	14 44·5	53 57·3	53 58·6
17	235 10 11·6	0·23	9·9947775	14 45·2	14 46·3	54 1·2	54 5·0
18	236 10 45·0	N. 0·12	9·9946884	14 47·7	14 49·4	54 10·1	54 16·4
19	237 11 19·9	S. 0·01	9·9946015	14 51·4	14 53·8	54 23·9	54 32·6
20	238 11 56·4	0·15	9·9945168	14 56·6	14 59·7	54 42·7	54 54·2
21	239 12 34·4	0·29	9·9944343	15 3·2	15 7·1	55 7·0	55 21·3
22	240 13 14·1	0·42	9·9943538	15 11·4	15 16·2	55 37·1	55 54·5
23	241 13 55·5	0·54	9·9942753	15 21·3	15 26·9	56 13·3	56 33·7
24	242 14 38·4	0 64	9·9941988	15 32·8	15 39·1	56 55·4	57 18·5
25	243 15 23·0	0·72	9·9941241	15 45·7	15 52·5	57 42·6	58 7·5
26	244 16 9·1	0·77	9·9940510	15 59·4	16 6·3	58 32·8	58 58·2
27	245 16 56·7	0·78	9·9939794	16 13·1	16 19·6	59 23·0	59 46·8
28	246 17 45·9	0·77	9·9939094	16 25·6	16 31·0	60 8·8	60 28·5
29	247 18 36·5	0·72	9·9938408	16 35·6	16 39·1	60 45·2	60 58·2
30	248 19 28·4	0·66	9·9937737	16 41·6	16 42·8	61 7·2	61 11·6
31	249 20 21·6	S. 0·57	9·9937079	16 42·7	16 41·3	61 11·3	61 6·1

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MEAN TIME.

Day of the Week.	Day of the Month.	THE MOON'S Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.	Age. Noon.	Meridian Passage.
		° ′ ″	° ′ ″	° ′ ″	° ′ ″	d	h m
Frid.	1	202 21 34·6	209 59 42·3	S.4 52 41·5	S.4 38 40·7	28·2	23 27·0
Sat.	2	217 39 25·4	225 19 16·6	4 19 36·3	3 55 49·5	29·2	6
Sun.	3	232 57 49·5	240 33 42·1	3 27 50·8	2 56 17·4	0·8	0 28·8
Mon.	4	248 5 41·1	255 32 43·6	2 21 52·2	1 45 20·2	1·8	1 32·8
Tues.	5	262 53 59·9	270 8 53·0	S.1 7 27·2	S.0 28 58·2	2·8	2 36·6
Wed.	6	277 16 59·8	284 18 9·1	N.0 9 24·5	N.0 47 3·6	3·8	3 37·6
Thur.	7	291 12 20·7	297 59 43·6	1 23 25·4	1 58 0·6	4·8	4 34·1
Frid.	8	304 40 33·7	311 15 13·3	2 30 25·4	3 0 19·9	5·8	5 25·9
Sat.	9	317 44 8·4	324 7 47·9	3 27 27·9	3 51 37·1	6·8	6 13·5
Sun.	10	330 26 41·8	336 41 20·7	4 12 37·4	4 30 22·0	7·8	6 57·8
Mon.	11	342 52 15·3	348 59 54·7	4 44 45·0	4 55 44·1	8·8	7 40·1
Tues.	12	355 4 47·1	1 7 18·7	5 3 16·7	5 7 23·0	9·8	8 21·5
Wed.	13	7 7 53·4	13 6 53·5	5 8 4·1	5 5 22·0	10·8	9 2·9
Thur.	14	19 4 39·2	25 1 28·3	4 59 20·7	4 50 5·2	11·8	9 45·3
Frid.	15	30 57 36·9	36 53 20·0	4 37 42·1	4 22 19·3	12·8	10 29·2
Sat.	16	42 48 50·9	48 44 22·0	4 4 6·1	3 43 13·3	13·8	11 15·2
Sun.	17	54 40 5·8	60 36 14·5	3 19 53·1	2 54 19·3	14·8	12 3·2
Mon.	18	66 33 0·4	72 30 36·9	2 26 46·4	1 57 31·1	15·8	12 52·8
Tues.	19	78 29 18·4	84 29 21·4	1 26 50·1	N.0 55 2·0	16·8	13 43·4
Wed.	20	90 31 2·9	96 34 42·7	N.0 22 25·7	S.0 10 38·8	17·8	14 33·9
Thur.	21	102 40 42·1	108 49 24·5	S.0 43 50·5	1 16 48·1	18·8	15 23·7
Frid.	22	115 1 14·7	121 16 39·4	1 49 10·0	2 20 33·3	19·8	16 12·3
Sat.	23	127 36 5·5	134 0 0·6	2 50 34·4	3 18 49·6	20·8	16 59·7
Sun.	24	140 28 51·8	147 3 4·2	3 44 54·5	4 8 24·5	21·8	17 46·6
Mon.	25	153 43 0·7	160 29 0·4	4 28 54·5	4 45 59·7	22·8	18 33·7
Tues.	26	167 21 16·9	174 19 56·9	4 59 16·2	5 8 21·4	23·8	19 22·1
Wed.	27	181 24 59·4	188 36 14·0	5 12 54·9	5 12 40·2	24·8	20 13·0
Thur.	28	195 53 19·6	203 15 44·1	5 7 24·7	4 57 2·4	25·8	21 7·6
Frid.	29	210 42 44·0	218 13 25·5	4 41 33·8	4 21 7·6	26·8	22 6·4
Sat.	30	225 46 45·5	233 21 33·5	3 56 0·7	3 26 39·3	27·8	23 9·1
Sun.	31	240 56 35·5	248 30 35·7	S.2 53 36·7	S.2 17 33·2	28·8	6

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MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 1.				*SUNDAY* 3.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	13 15 14·29	S. 13 13 55·4	134·27	0	15 18 28·42	S. 21 52 36·5	73·42
1	13 17 40·24	13 27 21·0	133·46	1	15 21 9·74	21 59 57·0	71·74
2	13 20 6·55	13 40 41·8	132·64	2	15 23 51·27	22 7 7·4	70·05
3	13 22 33·22	13 53 57·6	131·79	3	15 26 33·00	22 14 7·7	68·34
4	13 25 0·25	14 7 8·3	130·92	4	15 29 14·92	22 20 57·8	66·63
5	13 27 27·63	14 20 13·8	130·03	5	15 31 57·02	22 27 37·6	64·91
6	13 29 55·38	14 33 14·0	129·12	6	15 34 39·30	22 34 7·0	63·17
7	13 32 23·48	14 46 8·8	128·19	7	15 37 21·75	22 40 26·0	61·42
8	13 34 51·94	14 58 58·0	127·24	8	15 40 4·35	22 46 34·6	59·67
9	13 37 20·77	15 11 41·4	126·27	9	15 42 47·10	22 52 32·6	57·90
10	13 39 49·96	15 24 19·0	125·28	10	15 45 30·00	22 58 20·0	56·13
11	13 42 19·50	15 36 50·7	124·27	11	15 48 13·03	23 3 56·8	54·35
12	13 44 49·41	15 49 16·3	123·24	12	15 50 56·18	23 9 22·9	52·57
13	13 47 19·68	16 1 35·7	122·18	13	15 53 39·45	23 14 38·3	50·77
14	13 49 50·31	16 13 48·8	121·11	14	15 56 22·82	23 19 42·9	48·97
15	13 52 21·30	16 25 55·5	120·01	15	15 59 6·28	23 24 36·7	47·16
16	13 54 52·64	16 37 55·6	118·89	16	16 1 49·83	23 29 19·7	45·34
17	13 57 24·34	16 49 48·9	117·76	17	16 4 33·46	23 33 51·8	43·52
18	13 59 56·39	17 1 35·4	116·60	18	16 7 17·15	23 38 12·9	41·70
19	14 2 28·80	17 13 15·0	115·42	19	16 10 0·89	23 42 23·1	39·87
20	14 5 1·56	17 24 47·6	114·23	20	16 12 44·68	23 46 22·3	38·04
21	14 7 34·67	17 36 13·0	113·01	21	16 15 28·51	23 50 10·6	36·20
22	14 10 8·13	17 47 31·1	111·77	22	16 18 12·37	23 53 47·8	34·36
23	14 12 41·93	S. 17 58 41·7	110·52	23	16 20 56·24	S. 23 57 13·9	32·52
	SATURDAY 2.				*MONDAY* 4.		
0	14 15 16·07	S. 18 9 44·8	109·24	0	16 23 40·12	S. 24 0 29·0	30·67
1	14 17 50·56	18 20 40·3	107·95	1	16 26 23·99	24 3 33·0	28·82
2	14 20 25·38	18 31 28·0	106·63	2	16 29 7·85	24 6 26·0	26·97
3	14 23 0·53	18 42 7·8	105·30	3	16 31 51·69	24 9 7·8	25·13
4	14 25 36·02	18 52 39·6	103·95	4	16 34 35·49	24 11 38·6	23·28
5	14 28 11·84	19 3 3·3	102·58	5	16 37 19·24	24 13 58·3	21·43
6	14 30 47·98	19 13 18·8	101·20	6	16 40 2·93	24 16 6·8	19·58
7	14 33 24·44	19 23 26·0	99·79	7	16 42 46·56	24 18 4·3	17·74
8	14 36 1·22	19 33 24·7	98·37	8	16 45 30·11	24 19 50·8	15·89
9	14 38 38·30	19 43 14·9	96·93	9	16 48 13·58	24 21 26·1	14·05
10	14 41 15·69	19 52 56·5	95·47	10	16 50 56·95	24 22 50·4	12·21
11	14 43 53·39	20 2 29·3	94·00	11	16 53 40·21	24 24 3·7	10·37
12	14 46 31·38	20 11 53·3	92·51	12	16 56 23·36	24 25 5·9	8·54
13	14 49 9·67	20 21 8·4	91·00	13	16 59 6·38	24 25 57·1	6·71
14	14 51 48·24	20 30 14·4	89·48	14	17 1 49·26	24 26 37·4	4·88
15	14 54 27·09	20 39 11·3	87·94	15	17 4 32·00	24 27 6·7	3·06
16	14 57 6·22	20 47 58·9	86·38	16	17 7 14·58	24 27 25·1	1·25
17	14 59 45·62	20 56 37·2	84·81	17	17 9 56·99	24 27 32·6	0·56
18	15 2 25·28	21 5 6·1	83·23	18	17 12 39·22	24 27 29·2	2·36
19	15 5 5·20	21 13 25·4	81·62	19	17 15 21·27	24 27 15·0	4·16
20	15 7 45·37	21 21 35·1	80·01	20	17 18 3·12	24 26 50·1	5·95
21	15 10 25·79	21 29 35·2	78·38	21	17 20 44·76	24 26 14·4	7·73
22	15 13 6·44	21 37 25·5	76·74	22	17 23 26·20	24 25 28·0	9·50
23	15 15 47·32	21 45 6·0	75·09	23	17 26 7·41	24 24 31·0	11·27
24	15 18 28·42	S. 21 52 36·5		24	17 28 48·39	S. 24 23 23·3	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 5.		
	h m s	° ′ ″	″
0	17 28 48·39	S. 24 23 23·3	13·03
1	17 31 29·13	24 22 5·1	14·78
2	17 34 9·61	24 20 36·4	16·52
3	17 36 49·83	24 18 57·3	18·25
4	17 39 29·79	24 17 7·8	19·97
5	17 42 9·48	24 15 8·0	21·68
6	17 44 48·88	24 12 58·0	23·38
7	17 47 27·98	24 10 37·7	25·07
8	17 50 6·79	24 8 7·3	26·74
9	17 52 45·29	24 5 26·8	28·41
10	17 55 23·48	24 2 36·4	30·07
11	17 58 1·34	23 59 36·0	31·71
12	18 0 38·88	23 56 25·7	33·34
13	18 3 16·08	23 53 5·7	34·95
14	18 5 52·93	23 49 36·0	36·56
15	18 8 29·44	23 45 56·6	38·15
16	18 11 5·59	23 42 7·7	39·73
17	18 13 41·38	23 38 9·3	41·29
18	18 16 16·80	23 34 1·6	42·84
19	18 18 51·85	23 29 44·6	44·38
20	18 21 26·52	23 25 18·3	45·91
21	18 24 0·80	23 20 42·8	47·42
22	18 26 34·69	23 15 58·3	48·91
23	18 29 8·19	S. 23 11 4·8	50·39
	WEDNESDAY 6.		
0	18 31 41·29	S. 23 6 2·5	51·86
1	18 34 13·99	23 0 51·4	53·31
2	18 36 46·27	22 55 31·5	54·75
3	18 39 18·15	22 50 3·0	56·17
4	18 41 49·61	22 44 26·0	57·58
5	18 44 20·64	22 38 40·5	58·97
6	18 46 51·26	22 32 46·7	60·34
7	18 49 21·45	22 26 44·7	61·70
8	18 51 51·20	22 20 34·5	63·04
9	18 54 20·53	22 14 16·2	64·37
10	18 56 49·42	22 7 50·0	65·69
11	18 59 17·87	22 1 15·9	66·98
12	19 1 45·87	21 54 33·9	68·26
13	19 4 13·43	21 47 44·3	69·53
14	19 6 40·55	21 40 47·2	70·78
15	19 9 7·22	21 33 42·5	72·01
16	19 11 33·45	21 26 30·4	73·23
17	19 13 59·22	21 19 11·0	74·43
18	19 16 24·54	21 11 44·4	75·61
19	19 18 49·41	21 4 10·8	76·78
20	19 21 13·83	20 56 30·1	77·93
21	19 23 37·79	20 48 42·5	79·07
22	19 26 1·30	20 40 48·0	80·19
23	19 28 24·36	20 32 46·8	81·30
24	19 30 46·95	S. 20 24 39·0	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 7.		
	h m s	° ′ ″	″
0	19 30 46·95	S. 20 24 39·0	82·39
1	19 33 9·09	20 16 24·7	83·46
2	19 35 30·78	20 8 3·9	84·52
3	19 37 52·01	19 59 36·8	85·56
4	19 40 12·79	19 51 3·4	86·59
5	19 42 33·12	19 42 23·9	87·60
6	19 44 52·99	19 33 38·3	88·59
7	19 47 12·41	19 24 46·8	89·57
8	19 49 31·38	19 15 49·4	90·53
9	19 51 49·89	19 6 46·2	91·48
10	19 54 7·95	18 57 37·3	92·41
11	19 56 25·57	18 48 22·9	93·33
12	19 58 42·74	18 39 3·0	94·23
13	20 0 59·46	18 29 37·6	95·12
14	20 3 15·74	18 20 6·9	95·99
15	20 5 31·58	18 10 31·0	96·85
16	20 7 46·98	18 0 49·9	97·69
17	20 10 1·94	17 51 3·7	98·52
18	20 12 16·47	17 41 12·6	99·33
19	20 14 30·57	17 31 16·6	100·13
20	20 16 44·23	17 21 15·9	100·91
21	20 18 57·47	17 11 10·4	101·68
22	20 21 10·28	17 1 0·3	102·43
23	20 23 22·67	S. 16 50 45·7	103·18
	FRIDAY 8.		
0	20 25 34·64	S. 16 40 26·6	103·91
1	20 27 46·19	16 30 3·1	104·62
2	20 29 57·33	16 19 35·4	105·32
3	20 32 8·05	16 9 3·5	106·00
4	20 34 18·37	15 58 27·5	106·68
5	20 36 28·28	15 47 47·4	107·34
6	20 38 37·79	15 37 3·4	107·98
7	20 40 46·90	15 26 15·5	108·61
8	20 42 55·62	15 15 23·8	109·23
9	20 45 3·95	15 4 28·4	109·84
10	20 47 11·89	14 53 29·4	110·43
11	20 49 19·44	14 42 26·8	111·01
12	20 51 26·61	14 31 20·7	111·58
13	20 53 33·40	14 20 11·2	112·13
14	20 55 39·82	14 8 58·4	112·68
15	20 57 45·87	13 57 42·4	113·21
16	20 59 51·55	13 46 23·2	113·72
17	21 1 56·88	13 35 0·8	114·23
18	21 4 1·84	13 23 35·4	114·72
19	21 6 6·45	13 12 7·1	115·21
20	21 8 10·71	13 0 35·8	115·68
21	21 10 14·62	12 49 1·7	116·13
22	21 12 18·19	12 37 24·9	116·58
23	21 14 21·42	12 25 45·4	117·02
24	21 16 24·32	S. 12 14 3·3	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 9.				*MONDAY* 11.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	21 16 24·32	S. 12 14 3·3	117·45	0	22 49 34·90	S. 2 20 47·3	126·51
1	21 18 26·89	12 2 18·6	117·86	1	22 51 26·73	2 8 8·2	126·50
2	21 20 29·13	11 50 31·4	118·27	2	22 53 18·45	1 55 29·2	126·48
3	21 22 31·05	11 38 41·8	118·66	3	22 55 10·05	1 42 50·3	126·45
4	21 24 32·65	11 26 49·9	119·04	4	22 57 1·54	1 30 11·6	126·41
5	21 26 33·94	11 14 55·7	119·41	5	22 58 52·93	1 17 33·1	126·37
6	21 28 34·92	11 2 59·2	119·77	6	23 0 44·22	1 4 54·9	126·32
7	21 30 35·59	10 51 0·5	120·12	7	23 2 35·41	0 52 17·0	126·26
8	21 32 35·97	10 38 59·8	120·46	8	23 4 26·51	0 39 39·4	126·20
9	21 34 36·05	10 26 57·0	120·79	9	23 6 17·52	0 27 2·2	126·13
10	21 36 35·83	10 14 52·3	121·10	10	23 8 8·45	0 14 25·5	126·05
11	21 38 35·33	10 2 45·7	121·41	11	23 9 59·30	S. 0 1 49·2	125·96
12	21 40 34·55	9 50 37·2	121·71	12	23 11 50·07	N. 0 10 46·5	125·86
13	21 42 33·49	9 38 26·9	122·00	13	23 13 40·77	0 23 21·7	125·76
14	21 44 32·15	9 26 14·9	122·27	14	23 15 31·40	0 35 56·3	125·65
15	21 46 30·55	9 14 1·3	122·54	15	23 17 21·97	0 48 30·2	125·54
16	21 48 28·68	9 1 46·0	122·80	16	23 19 12·48	1 1 3·4	125·42
17	21 50 26·54	8 49 29·2	123·05	17	23 21 2·94	1 13 35·9	125·29
18	21 52 24·15	8 37 10·9	123·29	18	23 22 53·34	1 26 7·7	125·16
19	21 54 21·51	8 24 51·1	123·53	19	23 24 43·70	1 38 38·6	125·02
20	21 56 18·62	8 12 30·0	123·75	20	23 26 34·01	1 51 8·7	124·87
21	21 58 15·48	8 0 7·5	123·96	21	23 28 24·28	2 3 37·9	124·71
22	22 0 12·10	7 47 43·7	124·16	22	23 30 14·52	2 16 6·2	124·55
23	22 2 8·49	S. 7 35 18·7	124·36	23	23 32 4·72	N. 2 28 33·5	124·38
	SUNDAY 10.				*TUESDAY* 12.		
0	22 4 4·65	S. 7 22 52·6	124·55	0	23 33 54·90	N. 2 40 59·8	124·21
1	22 6 0·59	7 10 25·3	124·72	1	23 35 45·05	2 53 25·1	124·03
2	22 7 56·30	6 57 57·0	124·89	2	23 37 35·18	3 5 49·2	123·84
3	22 9 51·80	6 45 27·6	125·05	3	23 39 25·30	3 18 12·3	123·64
4	22 11 47·08	6 32 57·3	125·20	4	23 41 15·41	3 30 34·2	123·44
5	22 13 42·15	6 20 26·1	125·34	5	23 43 5·50	3 42 54·8	123·24
6	22 15 37·03	6 7 54·0	125·48	6	23 44 55·59	3 55 14·2	123·02
7	22 17 31·70	5 55 21·1	125·60	7	23 46 45·67	4 7 32·4	122·80
8	22 19 26·17	5 42 47·5	125·72	8	23 48 35·76	4 19 49·2	122·57
9	22 21 20·46	5 30 13·2	125·83	9	23 50 25·85	4 32 4·6	122·34
10	22 23 14·56	5 17 38·3	125·93	10	23 52 15·96	4 44 18·6	122·10
11	22 25 8·48	5 5 2·7	126·02	11	23 54 6·08	4 56 31·2	121·85
12	22 27 2·22	4 52 26·6	126·10	12	23 55 56·21	5 8 42·3	121·59
13	22 28 55·79	4 39 50·0	126·18	13	23 57 46·36	5 20 51·9	121·33
14	22 30 49·19	4 27 12·9	126·25	14	23 59 36·54	5 32 59·9	121·06
15	22 32 42·43	4 14 35·4	126·31	15	0 1 26·74	5 45 6·3	120·79
16	22 34 35·51	4 1 57·6	126·36	16	0 3 16·97	5 57 11·0	120·51
17	22 36 28·44	3 49 19·5	126·41	17	0 5 7·24	6 9 14·0	120·22
18	22 38 21·21	3 36 41·1	126·44	18	0 6 57·54	6 21 15·3	119·93
19	22 40 13·83	3 24 2·4	126·47	19	0 8 47·89	6 33 14·9	119·63
20	22 42 6·32	3 11 23·5	126·50	20	0 10 38·28	6 45 12·7	119·32
21	22 43 58·66	2 58 44·5	126·51	21	0 12 28·71	6 57 8·6	119·00
22	22 45 50·87	2 46 5·5	126·52	22	0 14 19·20	7 9 2·6	118·68
23	22 47 42·95	2 33 26·4	126·52	23	0 16 9·75	7 20 54·7	118·35
24	22 49 34·90	S. 2 20 47·3		24	0 18 0·35	N. 7 32 44·8	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 13.		
	h m s	° ′ ″	″
0	0 18 0·35	N. 7 32 44·8	118·02
1	0 19 51·01	7 44 32·9	117·68
2	0 21 41·74	7 56 19·0	117·33
3	0 23 32·54	8 8 3·0	116·98
4	0 25 23·41	8 19 44·8	116·62
5	0 27 14·35	8 31 24·5	116·25
6	0 29 5·37	8 43 2·0	115·87
7	0 30 56·47	8 54 37·2	115·49
8	0 32 47·65	9 6 10·2	115·10
9	0 34 38·92	9 17 40·8	114·71
10	0 36 30·28	9 29 9·0	114·30
11	0 38 21·74	9 40 34·8	113·89
12	0 40 13·29	9 51 58·2	113·48
13	0 42 4·94	10 3 19·1	113·06
14	0 43 56·69	10 14 37·5	112·63
15	0 45 48·54	10 25 53·3	112·20
16	0 47 40·51	10 37 6·5	111·75
17	0 49 32·58	10 48 17·0	111·30
18	0 51 24·76	10 59 24·8	110·85
19	0 53 17·06	11 10 29·9	110·38
20	0 55 9·48	11 21 32·2	109·91
21	0 57 2·02	11 32 31·7	109·44
22	0 58 54·68	11 43 28·3	108·95
23	1 0 47·47	N. 11 54 22·0	108·46
	THURSDAY 14.		
0	1 2 40·39	N. 12 5 12·7	107·96
1	1 4 33·44	12 16 0·5	107·46
2	1 6 26·63	12 26 45·2	106·95
3	1 8 19·95	12 37 26·9	106·43
4	1 10 13·41	12 48 5·5	105·91
5	1 12 7·01	12 58 40·9	105·37
6	1 14 0·76	13 9 13·1	104·83
7	1 15 54·65	13 19 42·0	104·28
8	1 17 48·69	13 30 7·7	103·73
9	1 19 42·89	13 40 30·1	103·17
10	1 21 37·23	13 50 49·1	102·60
11	1 23 31·73	14 1 4·7	102·02
12	1 25 26·39	14 11 16·8	101·44
13	1 27 21·20	14 21 25·4	100·85
14	1 29 16·18	14 31 30·5	100·25
15	1 31 11·32	14 41 32·0	99·65
16	1 33 6·62	14 51 29·9	99·04
17	1 35 2·09	15 1 24·2	98·42
18	1 36 57·73	15 11 14·7	97·79
19	1 38 53·54	15 21 1·4	97·16
20	1 40 49·52	15 30 44·3	96·52
21	1 42 45·68	15 40 23·4	95·87
22	1 44 42·02	15 49 58·7	95·22
23	1 46 38·53	15 59 30·0	94·55
24	1 48 35·22	N. 16 8 57·3	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 15.		
	h m s	° ′ ″	″
0	1 48 35·22	N. 16 8 57·3	93·89
1	1 50 32·09	16 18 20·6	93·21
2	1 52 29·14	16 27 39·9	92·53
3	1 54 26·38	16 36 55·1	91·84
4	1 56 23·80	16 46 6·1	91·14
5	1 58 21·41	16 55 12·9	90·43
6	2 0 19·20	17 4 15·5	89·72
7	2 2 17·19	17 13 13·8	89·00
8	2 4 15·36	17 22 7·8	88·27
9	2 6 13·72	17 30 57·5	87·53
10	2 8 12·28	17 39 42·7	86·79
11	2 10 11·03	17 48 23·4	86·04
12	2 12 9·97	17 56 59·6	85·28
13	2 14 9·10	18 5 31·3	84·52
14	2 16 8·43	18 13 58·4	83·74
15	2 18 7·96	18 22 20·9	82·97
16	2 20 7·68	18 30 38·7	82·18
17	2 22 7·60	18 38 51·8	81·39
18	2 24 7·72	18 47 0·1	80·59
19	2 26 8·04	18 55 3·6	79·78
20	2 28 8·55	19 3 2·3	78·97
21	2 30 9·27	19 10 56·1	78·15
22	2 32 10·18	19 18 45·0	77·32
23	2 34 11·30	N. 19 26 28·9	76·48
	SATURDAY 16.		
0	2 36 12·61	N. 19 34 7·8	75·64
1	2 38 14·12	19 41 41·6	74·79
2	2 40 15·83	19 49 10·3	73·93
3	2 42 17·74	19 56 33·9	73·06
4	2 44 19·85	20 3 52·3	72·19
5	2 46 22·16	20 11 5·5	71·31
6	2 48 24·67	20 18 13·4	70·43
7	2 50 27·37	20 25 15·9	69·53
8	2 52 30·28	20 32 13·1	68·63
9	2 54 33·38	20 39 4·9	67·73
10	2 56 36·69	20 45 51·3	66·82
11	2 58 40·19	20 52 32·2	65·90
12	3 0 43·89	20 59 7·6	64·97
13	3 2 47·78	21 5 37·4	64·03
14	3 4 51·86	21 12 1·6	63·09
15	3 6 56·13	21 18 20·2	62·15
16	3 9 0·60	21 24 33·1	61·19
17	3 11 5·27	21 30 40·2	60·23
18	3 13 10·13	21 36 41·6	59·27
19	3 15 15·18	21 42 37·2	58·30
20	3 17 20·42	21 48 27·0	57·32
21	3 19 25·85	21 54 10·9	56·33
22	3 21 31·47	21 59 48·9	55·34
23	3 23 37·28	22 5 20·9	54·34
24	3 25 43·27	N. 22 10 47·0	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec for 10m.
	SUNDAY 17.				*TUESDAY* 19.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	3 25 43·27	N.22 10 47·0	53·34	0	5 9 22·96	N.24 24 0·8	0·46
1	3 27 49·44	22 16 7·0	52·33	1	5 11 34·96	24 23 58·0	1·66
2	3 29 55·78	22 21 21·0	51·31	2	5 13 47·01	24 23 48·1	2·86
3	3 32 2·31	22 26 28·9	50·29	3	5 15 59·10	24 23 30·9	4·05
4	3 34 9·01	22 31 30·6	49·26	4	5 18 11·22	24 23 6·6	5·25
5	3 36 15·89	22 36 26·2	48·23	5	5 20 23·37	24 22 35·1	6·45
6	3 38 22·94	22 41 15·5	47·19	6	5 22 35·56	24 21 56·4	7·65
7	3 40 30·16	22 45 58·6	46·14	7	5 24 47·77	24 21 10·5	8·85
8	3 42 37·56	22 50 35·5	45·09	8	5 27 0·00	24 20 17·4	10·05
9	3 44 45·12	22 55 6·0	44·03	9	5 29 12·25	24 19 17·1	11·25
10	3 46 52·84	22 59 30·2	42·97	10	5 31 24·51	24 18 9·6	12·45
11	3 49 0·74	23 3 48·1	41·90	11	5 33 36·78	24 16 54·9	13·65
12	3 51 8·79	23 7 59·5	40·83	12	5 35 49·06	24 15 33·0	14·85
13	3 53 17·00	23 12 4·5	39·75	13	5 38 1·35	24 14 3·9	16·05
14	3 55 25·37	23 16 3·0	38·67	14	5 40 13·63	24 12 27·6	17·25
15	3 57 33·89	23 19 55·0	37·58	15	5 42 25·91	24 10 44·1	18·45
16	3 59 42·56	23 23 40·5	36·48	16	5 44 38·19	24 8 53·4	19·65
17	4 1 51·38	23 27 19·4	35·39	17	5 46 50·46	24 6 55·5	20·85
18	4 4 0·35	23 30 51·7	34·28	18	5 49 2·71	24 4 50·4	22·04
19	4 6 9·46	23 34 17·4	33·18	19	5 51 14·94	24 2 38·1	23·24
20	4 8 18·71	23 37 36·5	32·07	20	5 53 27·16	24 0 18·7	24·43
21	4 10 28·11	23 40 48·9	30·95	21	5 55 39·36	23 57 52·1	25·63
22	4 12 37·64	23 43 54·6	29·83	22	5 57 51·53	23 55 18·3	26·82
23	4 14 47·30	N.23 46 53·6	28·70	23	6 0 3·66	N.23 52 37·4	28·01
	MONDAY 18.				*WEDNESDAY* 20.		
0	4 16 57·09	N.23 49 45·8	27·58	0	6 2 15·77	N.23 49 49·4	29·20
1	4 19 7·01	23 52 31·3	26·45	1	6 4 27·84	23 46 54·2	30·38
2	4 21 17·06	23 55 10·0	25·31	2	6 6 39·87	23 43 51·9	31·57
3	4 23 27·22	23 57 41·9	24·17	3	6 8 51·86	23 40 42·5	32·75
4	4 25 37·50	24 0 6·9	23·03	4	6 11 3·80	23 37 26·0	33·93
5	4 27 47·90	24 2 25·1	21·88	5	6 13 15·70	23 34 2·4	35·11
6	4 29 58·41	24 4 36·4	20·73	6	6 15 27·54	23 30 31·8	36·28
7	4 32 9·03	24 6 40·7	19·58	7	6 17 39·33	23 26 54·1	37·46
8	4 34 19·75	24 8 38·2	18·42	8	6 19 51·06	23 23 9·3	38·63
9	4 36 30·58	24 10 28·7	17·25	9	6 22 2·74	23 19 17·6	39·79
10	4 38 41·50	24 12 12·2	16·09	10	6 24 14·35	23 15 18·8	40·96
11	4 40 52·52	24 13 48·8	14·92	11	6 26 25·89	23 11 13·1	42·12
12	4 43 3·63	24 15 18·3	13·75	12	6 28 37·37	23 7 0·3	43·28
13	4 45 14·83	24 16 40·8	12·58	13	6 30 48·78	23 2 40·6	44·43
14	4 47 26·12	24 17 56·3	11·40	14	6 33 0·11	22 58 14·0	45·59
15	4 49 37·49	24 19 4·7	10·22	15	6 35 11·37	22 53 40·5	46·73
16	4 51 48·94	24 20 6·0	9·04	16	6 37 22·55	22 49 0·1	47·88
17	4 54 0·46	24 21 0·2	7·86	17	6 39 33·65	22 44 12·8	49·02
18	4 56 12·06	24 21 47·4	6·68	18	6 41 44·67	22 39 18·7	50·16
19	4 58 23·73	24 22 27·5	5·49	19	6 43 55·61	22 34 17·7	51·29
20	5 0 35·46	24 23 0·4	4·30	20	6 46 6·46	22 29 9·9	52·42
21	5 2 47·25	24 23 26·2	3·11	21	6 48 17·22	22 23 55·3	53·55
22	5 4 59·10	24 23 44·9	1·92	22	6 50 27·89	22 18 34·0	54·67
23	5 7 11·00	24 23 56·4	0·73	23	6 52 38·47	22 13 6·0	55·79
24	5 9 22·96	N.24 24 0·8		24	6 54 48·95	N.22 7 31·2	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 21.		
	h m s	° ′ ″	″
0	6 54 48·95	N.22 7 31·2	56·91
1	6 56 59·34	22 1 49·7	58·02
2	6 59 9·62	21 56 1·6	59·13
3	7 1 19·81	21 50 6·8	60·23
4	7 3 29·90	21 44 5·4	61·33
5	7 5 39·88	21 37 57·4	62·42
6	7 7 49·76	21 31 42·9	63·51
7	7 9 59·54	21 25 21·9	64·59
8	7 12 9·20	21 18 54·3	65·67
9	7 14 18·76	21 12 20·3	66·74
10	7 16 28·21	21 5 39·9	67·81
11	7 18 37·55	20 58 53·0	68·88
12	7 20 46·78	20 51 59·8	69·94
13	7 22 55·90	20 45 0·2	70·99
14	7 25 4·90	20 37 54·3	72·03
15	7 27 13·78	20 30 42·1	73·08
16	7 29 22·55	20 23 23·6	74·12
17	7 31 31·21	20 15 58·9	75·15
18	7 33 39·75	20 8 28·0	76·17
19	7 35 48·17	20 0 51·0	77·19
20	7 37 56·48	19 53 7·8	78·21
21	7 40 4·67	19 45 18·6	79·22
22	7 42 12·74	19 37 23·3	80·22
23	7 44 20·69	N.19 29 22·0	81·21
	FRIDAY 22.		
0	7 46 28·53	N.19 21 14·7	82·20
1	7 48 36·25	19 13 1·5	83·19
2	7 50 43·85	19 4 42·3	84·17
3	7 52 51·34	18 56 17·3	85·14
4	7 54 58·70	18 47 46·5	86·11
5	7 57 5·95	18 39 9·8	87·07
6	7 59 13·08	18 30 27·4	88·02
7	8 1 20·09	18 21 39·2	88·97
8	8 3 26·99	18 12 45·4	89·91
9	8 5 33·77	18 3 45·9	90·85
10	8 7 40·44	17 54 40·8	91·78
11	8 9 46·99	17 45 30·2	92·70
12	8 11 53·43	17 36 14·0	93·61
13	8 13 59·76	17 26 52·3	94·52
14	8 16 5·97	17 17 25·2	95·42
15	8 18 12·07	17 7 52·7	96·32
16	8 20 18·06	16 58 14·8	97·21
17	8 22 23·95	16 48 31·5	98·09
18	8 24 29·72	16 38 43·0	98·96
19	8 26 35·39	16 28 49·2	99·83
20	8 28 40·96	16 18 50·2	100·70
21	8 30 46·42	16 8 46·0	101·55
22	8 32 51·77	15 58 36·7	102·40
23	8 34 57·03	15 48 22·3	103·24
24	8 37 2·19	N.15 38 2·9	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 23.		
	h m s	° ′ ″	″
0	8 37 2·19	N.15 38 2·9	104·07
1	8 39 7·25	15 27 38·5	104·90
2	8 41 12·22	15 17 9·1	105·72
3	8 43 17·09	15 6 34·8	106·53
4	8 45 21·87	14 55 55·6	107·34
5	8 47 26·56	14 45 11·6	108·13
6	8 49 31·16	14 34 22·8	108·92
7	8 51 35·67	14 23 29·2	109·71
8	8 53 40·10	14 12 30·9	110·48
9	8 55 44·45	14 1 28·0	111·25
10	8 57 48·72	13 50 20·5	112·01
11	8 59 52·91	13 39 8·4	112·76
12	9 1 57·02	13 27 51·8	113·51
13	9 4 1·06	13 16 30·7	114·25
14	9 6 5·03	13 5 5·2	114·98
15	9 8 8·94	12 53 35·3	115·71
16	9 10 12·78	12 42 1·1	116·42
17	9 12 16·55	12 30 22·6	117·13
18	9 14 20·26	12 18 39·8	117·83
19	9 16 23·92	12 6 52·8	118·52
20	9 18 27·52	11 55 1·6	119·21
21	9 20 31·07	11 43 6·3	119·89
22	9 22 34·58	11 31 7·0	120·56
23	9 24 38·03	N.11 19 3·7	121·22
	SUNDAY 24.		
0	9 26 41·44	N.11 6 56·3	121·87
1	9 28 44·81	10 54 45·0	122·52
2	9 30 48·14	10 42 29·9	123·16
3	9 32 51·44	10 30 11·0	123·79
4	9 34 54·71	10 17 48·3	124·41
5	9 36 57·95	10 5 21·8	125·02
6	9 39 1·16	9 52 51·7	125·62
7	9 41 4·35	9 40 18·0	126·22
8	9 43 7·53	9 27 40·7	126·80
9	9 45 10·69	9 14 59·8	127·38
10	9 47 13·84	9 2 15·5	127·95
11	9 49 16·98	8 49 27·8	128·51
12	9 51 20·11	8 36 36·8	129·07
13	9 53 23·25	8 23 42·4	129·61
14	9 55 26·39	8 10 44·7	130·15
15	9 57 29·53	7 57 43·8	130·67
16	9 59 32·69	7 44 39·8	131·19
17	10 1 35·86	7 31 32·6	131·70
18	10 3 39·04	7 18 22·4	132·20
19	10 5 42·25	7 5 9·2	132·70
20	10 7 45·48	6 51 53·0	133·18
21	10 9 48·74	6 38 33·9	133·65
22	10 11 52·03	6 25 12·0	134·12
23	10 13 55·36	6 11 47·3	134·57
24	10 15 58·72	N. 5 58 19·9	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 25.		
	h m s	° ′ ″	″
0	10 15 58·72	N. 5 58 19·9	135·02
1	10 18 2·13	5 44 49·8	135·45
2	10 20 5·59	5 31 17·1	135·88
3	10 22 9·11	5 17 41·8	136·30
4	10 24 12·69	5 4 4·0	136·71
5	10 26 16·32	4 50 23·7	137·11
6	10 28 20·02	4 36 41·0	137·50
7	10 30 23·79	4 22 56·0	137·87
8	10 32 27·63	4 9 8·8	138·24
9	10 34 31·55	3 55 19·4	138·60
10	10 36 35·55	3 41 27·8	138·95
11	10 38 39·63	3 27 34·1	139·28
12	10 40 43·80	3 13 38·4	139·61
13	10 42 48·07	2 59 40·7	139·93
14	10 44 52·44	2 45 41·2	140·23
15	10 46 56·92	2 31 39·8	140·53
16	10 49 1·50	2 17 36·6	140·82
17	10 51 6·19	2 3 31·7	141·09
18	10 53 11·00	1 49 25·1	141·35
19	10 55 15·93	1 35 17·0	141·60
20	10 57 20·99	1 21 7·4	141·85
21	10 59 26·18	1 6 56·3	142·08
22	11 1 31·51	0 52 43·9	142·29
23	11 3 36·97	N. 0 38 30·1	142·50
	TUESDAY 26.		
0	11 5 42·57	N. 0 24 15·1	142·69
1	11 7 48·32	N. 0 9 58·9	142·88
2	11 9 54·23	S. 0 4 18·4	143·06
3	11 12 0·29	0 18 36·7	143·22
4	11 14 6·51	0 32 56·0	143·36
5	11 16 12·91	0 47 16·2	143·50
6	11 18 19·47	1 1 37·2	143·62
7	11 20 26·20	1 15 59·0	143·74
8	11 22 33·12	1 30 21·4	143·84
9	11 24 40·23	1 44 44·4	143·92
10	11 26 47·52	1 59 7·9	144·00
11	11 28 55·01	2 13 31·9	144·06
12	11 31 2·69	2 27 56·3	144·11
13	11 33 10·58	2 42 21·0	144·15
14	11 35 18·68	2 56 45·9	144·17
15	11 37 26·99	3 11 10·9	144·18
16	11 39 35·53	3 25 36·0	144·18
17	11 41 44·28	3 40 1·0	144·16
18	11 43 53·26	3 54 25·9	144·13
19	11 46 2·47	4 8 50·7	144·08
20	11 48 11·92	4 23 15·2	144·02
21	11 50 21·61	4 37 39·3	143·95
22	11 52 31·54	4 52 3·0	143·86
23	11 54 41·72	5 6 26·2	143·76
24	11 56 52·16	S. 5 20 48·7	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 27.		
	h m s	° ′ ″	″
0	11 56 52·16	S. 5 20 48·7	143·65
1	11 59 2·86	5 35 10·6	143·52
2	12 1 13·82	5 49 31·7	143·37
3	12 3 25·04	6 3 51·9	143·21
4	12 5 36·54	6 18 11·2	143·04
5	12 7 48·32	6 32 29·4	142·85
6	12 10 0·38	6 46 46·5	142·64
7	12 12 12·73	7 1 2·4	142·41
8	12 14 25·36	7 15 16·9	142·17
9	12 16 38·29	7 29 29·9	141·92
10	12 18 51·52	7 43 41·4	141·65
11	12 21 5·05	7 57 51·3	141·37
12	12 23 18·88	8 11 59·5	141·07
13	12 25 33·03	8 26 5·9	140·75
14	12 27 47·49	8 40 10·4	140·42
15	12 30 2·28	8 54 12·9	140·07
16	12 32 17·39	9 8 13·3	139·70
17	12 34 32·82	9 22 11·5	139·31
18	12 36 48·59	9 36 7·4	138·91
19	12 39 4·69	9 50 0·9	138·49
20	12 41 21·13	10 3 51·8	138·05
21	12 43 37·92	10 17 40·1	137·60
22	12 45 55·05	10 31 25·7	137·12
23	12 48 12·53	S. 10 45 8·4	136·63
	THURSDAY 28.		
0	12 50 30·36	S. 10 58 48·2	136·13
1	12 52 48·55	11 12 25·0	135·61
2	12 55 7·10	11 25 58·7	135·07
3	12 57 26·01	11 39 29·1	134·51
4	12 59 45·29	11 52 56·2	133·93
5	13 2 4·94	12 6 19·8	133·33
6	13 4 24·96	12 19 39·8	132·72
7	13 6 45·36	12 32 56·1	132·08
8	13 9 6·14	12 46 8·6	131·43
9	13 11 27·30	12 59 17·2	130·75
10	13 13 48·84	13 12 21·7	130·06
11	13 16 10·76	13 25 22·1	129·36
12	13 18 33·07	13 38 18·2	128·63
13	13 20 55·77	13 51 10·0	127·88
14	13 23 18·87	14 3 57·3	127·11
15	13 25 42·36	14 16 39·9	126·32
16	13 28 6·24	14 29 17·8	125·51
17	13 30 30·53	14 41 50·9	124·68
18	13 32 55·21	14 54 19·0	123·84
19	13 35 20·29	15 6 42·1	122·98
20	13 37 45·78	15 19 0·0	122·09
21	13 40 11·67	15 31 12·5	121·18
22	13 42 37·97	15 43 19·6	120·26
23	13 45 4·67	15 55 21·1	119·32
24	13 47 31·77	S. 16 7 17·0	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 29.				*SATURDAY* 30.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	13 47 31·77	S. 16 7 17·0	118·35	0	14 48 22·79	S. 20 20 12·4	89·36
1	13 49 59·29	16 19 7·1	117·36	1	14 50 59·73	20 29 8·6	87·92
2	13 52 27·21	16 30 51·3	116·36	2	14 53 37·03	20 37 56·1	86·46
3	13 54 55·54	16 42 29·5	115·34	3	14 56 14·68	20 46 34·8	84·98
4	13 57 24·28	16 54 1·5	114·29	4	14 58 52·67	20 55 4·7	83·48
5	13 59 53·42	17 5 27·2	113·23	5	15 1 31·01	21 3 25·6	81·97
6	14 2 22·97	17 16 46·6	112·15	6	15 4 9·69	21 11 37·4	80·44
7	14 4 52·93	17 27 59·5	111·05	7	15 6 48·69	21 19 40·1	78·90
8	14 7 23·29	17 39 5·8	109·93	8	15 9 28·02	21 27 33·5	77·34
9	14 9 54·05	17 50 5·4	108·78	9	15 12 7·67	21 35 17·5	75·76
10	14 12 25·22	18 0 58·1	107·62	10	15 14 47·63	21 42 52·1	74·17
11	14 14 56·79	18 11 43·8	106·44	11	15 17 27·90	21 50 17·1	72·56
12	14 17 28·76	18 22 22·5	105·25	12	15 20 8·46	21 57 32·5	70·95
13	14 20 1·13	18 32 54·0	104·03	13	15 22 49·32	22 4 38·2	69·31
14	14 22 33·90	18 43 18·2	102·79	14	15 25 30·47	22 11 34·1	67·66
15	14 25 7·06	18 53 34·9	101·53	15	15 28 11·89	22 18 20·1	66·00
16	14 27 40·61	19 3 44·1	100·26	16	15 30 53·59	22 24 56·1	64·32
17	14 30 14·55	19 13 45·6	98·96	17	15 33 35·54	22 31 22·0	62·63
18	14 32 48·88	19 23 39·4	97·64	18	15 36 17·75	22 37 37·8	60·93
19	14 35 23·59	19 33 25·3	96·31	19	15 39 0·21	22 43 43·4	59·21
20	14 37 58·69	19 43 3·2	94·96	20	15 41 42·90	22 49 38·7	57·49
21	14 40 34·16	19 52 32·9	93·59	21	15 44 25·82	22 55 23·6	55·75
22	14 43 10·00	20 1 54·4	92·28	22	15 47 8·96	23 0 58·1	54·00
23	14 45 46·21	20 11 7·6	90·80	23	15 49 52·31	23 6 22·1	52·24
24	14 48 22·79	S. 20 20 12·4		24	15 52 35·87	S. 23 11 35·5	

PHASES OF THE MOON.

		d h m
●	New Moon	2 4 3·3
☽	*First Quarter*	8 22 44·2
○	Full Moon	17 1 6·6
☾	*Last Quarter*	24 23 6·6

		d h
☾	Perigee	2 4
☾	Apogee	15 18
☾	Perigee	30 17

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LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	*Noon.*	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
4	Sun W.	26 6 32	2398	27 50 9	2405	29 33 37	2413	31 16 54	2422
	α Aquilæ E.	58 42 38	2782	57 7 46	2825	55 33 51	2873	54 0 58	2925
	Fomalhaut E.	83 23 26	2487	81 41 55	2504	80 0 48	2522	78 20 5	2540
	α Pegasi E.	103 29 27	2187	101 40 40	2196	99 52 7	2207	98 3 50	2219
5	Sun W.	39 49 25	2486	41 30 58	2500	43 12 11	2517	44 53 1	2533
	α Aquilæ E.	46 34 59	3269	45 10 11	3359	43 47 8	3457	42 25 56	3567
	Fomalhaut E.	70 3 47	2660	68 26 14	2689	66 49 19	2720	65 13 6	2752
	α Pegasi E.	89 7 8	2288	87 20 51	2305	85 34 59	2382	83 49 31	2339
6	Sun W.	53 11 22	2621	54 49 48	2640	56 27 48	2658	58 5 24	2678
	Fomalhaut E.	57 23 32	2948	55 52 14	2994	54 21 54	3043	52 52 35	3096
	α Pegasi E.	75 8 47	2435	73 26 2	2456	71 43 47	2477	70 2 2	2499
7	Sun W.	66 6 51	2776	67 41 51	2795	69 16 25	2815	70 50 33	2835
	Venus W.	22 42 21	2825	24 16 16	2844	25 49 47	2863	27 22 54	2882
	Fomalhaut E.	45 43 31	3424	44 21 42	3505	43 1 23	3594	41 42 42	3691
	α Pegasi E.	61 41 6	2616	60 2 33	2641	58 24 34	2666	56 47 9	2693
	α Arietis E.	104 3 32	2453	102 21 13	2471	100 39 19	2490	98 57 52	2507
8	Sun W.	78 34 58	2931	80 6 37	2950	81 37 53	2969	83 8 45	2987
	Venus W.	35 2 20	2977	36 33 1	2996	38 3 19	3015	39 33 13	3033
	α Pegasi E.	48 49 8	2836	47 15 27	2867	45 42 26	2901	44 10 8	2935
	α Arietis E.	90 36 51	2598	88 57 53	2615	87 19 19	2632	85 41 8	2650
9	Sun W.	90 37 28	3075	92 6 8	3092	93 34 28	3109	95 2 27	3124
	Venus W.	46 57 11	3122	48 24 54	3138	49 52 17	3154	51 19 21	3171
	α Pegasi E.	36 40 20	3143	35 13 2	3194	33 46 45	3249	32 21 34	3310
	α Arietis E.	77 35 57	2732	76 0 0	2748	74 24 24	2764	72 49 9	2779
	Aldebaran E.	110 21 0	2757	108 45 36	2772	107 10 32	2786	105 35 46	2801
10	Sun W.	102 17 42	3200	103 43 51	3213	105 9 45	3228	106 35 21	3240
	Venus W.	58 29 56	3247	59 55 10	3260	61 20 8	3274	62 44 50	3288
	α Arietis E.	64 57 43	2851	63 24 21	2864	61 51 16	2877	60 18 28	2890
	Aldebaran E.	97 46 27	2868	96 13 27	2880	94 40 42	2892	93 8 13	2905
11	Sun W.	113 39 42	3301	115 3 53	3312	116 27 51	3322	117 51 37	3332
	Venus W.	69 44 38	3347	71 7 55	3358	72 30 59	3368	73 53 52	3378
	α Aquilæ W.	47 29 56	3936	48 42 39	3900	49 55 59	3866	51 9 54	3835
	α Arietis E.	52 38 29	2951	51 7 15	2962	49 36 14	2973	48 5 28	2984
	Aldebaran E.	85 29 29	2959	83 58 25	2969	82 27 34	2979	80 56 55	2989
12	Sun W.	124 47 40	3377	126 10 23	3386	127 32 56	3393	128 55 21	3400
	Venus W.	80 45 31	3423	82 7 22	3431	83 29 4	3438	84 50 38	3445
	α Aquilæ W.	57 26 17	3724	58 42 39	3708	59 59 18	3692	61 16 13	3678
	Fomalhaut W.	34 39 25	4740	35 39 51	4621	36 41 58	4514	37 45 38	4419
	α Arietis E.	40 34 55	3036	39 5 27	3046	37 36 12	3056	36 7 9	3068
	Aldebaran E.	73 26 30	3031	71 56 56	3039	70 27 32	3047	68 58 17	3054
13	Venus W.	91 36 38	3475	92 57 30	3479	94 18 18	3484	95 39 0	3488
	α Aquilæ W.	67 43 59	3628	69 2 3	3622	70 20 14	3614	71 38 33	3608
	Fomalhaut W.	43 22 39	4076	44 33 4	4026	45 44 18	3981	46 56 16	3940
	Aldebaran E.	61 34 10	3087	60 5 44	3093	58 37 26	3099	57 9 15	3104
	Pollux E.	103 24 58	3078	101 56 22	3083	100 27 51	3087	98 59 25	3090

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LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
4	Sun	W.	32 59 58	2433	34 42 46	2445	36 25 17	2457	38 7 31	2471
	α Aquilæ	E.	52 29 11	2982	50 58 36	3044	49 29 18	3113	48 1 24	3187
	Fomalhaut	E.	76 39 48	2561	75 0 0	2583	73 20 42	2608	71 41 58	2633
	α Pegasi	E.	96 15 50	2231	94 28 9	2245	92 40 48	2258	90 53 47	2273
5	Sun	W.	46 33 29	2549	48 13 34	2567	49 53 14	2585	51 32 30	2602
	α Aquilæ	E.	41 6 46	3688	39 49 46	3823	38 35 8	3973	37 23 2	4142
	Fomalhaut	E.	63 37 35	2787	62 2 50	2824	60 28 53	2863	58 55 46	2904
	α Pegasi	E.	82 4 28	2357	80 19 51	2376	78 35 42	2395	76 52 0	2415
6	Sun	W.	59 42 33	2698	61 19 16	2717	62 55 34	2737	64 31 25	2756
	Fomalhaut	E.	51 24 21	3153	49 57 16	3214	48 31 23	3279	47 6 47	3348
	α Pegasi	E.	68 20 47	2522	66 40 4	2544	64 59 52	2568	63 20 13	2591
7	Sun	W.	72 24 16	2854	73 57 34	2874	75 30 26	2893	77 2 54	2912
	Venus	W.	28 55 36	2901	30 27 53	2920	31 59 46	2939	33 31 15	2958
	Fomalhaut	E.	40 25 45	3797	39 10 40	3913	37 57 33	4041	36 46 34	4183
	α Pegasi	E.	55 10 19	2720	53 34 6	2747	51 58 29	2775	50 23 29	2805
	α Arietis	E.	97 16 49	2526	95 36 12	2545	93 56 1	2562	92 16 13	2580
8	Sun	W.	84 39 14	3005	86 9 21	3023	87 39 5	3041	89 8 27	3058
	Venus	W.	41 2 45	3051	42 31 54	3069	44 0 41	3087	45 29 6	3104
	α Pegasi	E.	42 38 34	2972	41 7 46	3010	39 37 46	3051	38 8 36	3095
	α Arietis	E.	84 3 21	2666	82 25 56	2684	80 48 55	2700	79 12 15	2716
9	Sun	W.	96 30 7	3140	97 57 28	3155	99 24 31	3171	100 51 15	3185
	Venus	W.	52 46 5	3187	54 12 30	3203	55 38 36	3217	57 4 25	3232
	α Pegasi	E.	30 57 34	3378	29 34 53	3455	28 13 39	3543	26 54 2	3641
	α Arietis	E.	71 14 13	2794	69 39 37	2809	68 5 21	2823	66 31 23	2837
	Aldebaran	E.	104 1 19	2815	102 27 10	2828	100 53 18	2841	99 19 44	2855
10	Sun	W.	108 0 43	3253	109 25 49	3265	110 50 41	3278	112 15 18	3289
	Venus	W.	64 9 16	3300	65 33 28	3313	66 57 25	3325	68 21 8	3336
	α Arietis	E.	58 45 57	2903	57 13 42	2916	55 41 43	2928	54 9 59	2939
	Aldebaran	E.	91 36 0	2916	90 4 1	2927	88 32 17	2938	87 0 46	2949
11	Sun	W.	119 15 12	3342	120 38 35	3351	122 1 47	3360	123 24 49	3370
	Venus	W.	75 16 33	3388	76 39 3	3398	78 1 22	3406	79 23 32	3415
	α Aquilæ	W.	52 24 20	3809	53 39 13	3784	54 54 32	3762	56 10 14	3742
	α Arietis	E.	46 34 55	2994	45 4 35	3005	43 34 29	3016	42 4 36	3026
	Aldebaran	E.	79 26 28	2998	77 56 13	3006	76 26 8	3015	74 56 14	3023
12	Sun	W.	130 17 37	3407	131 39 45	3414	133 1 46	3421	134 23 39	3426
	Venus	W.	86 12 4	3451	87 33 23	3458	88 54 34	3463	90 15 39	3469
	α Aquilæ	W.	62 33 23	3667	63 50 45	3656	65 8 19	3646	66 26 4	3636
	Fomalhaut	W.	38 50 42	4335	39 57 3	4260	41 4 33	4192	42 13 7	4131
	α Arietis	E.	34 38 20	3078	33 9 44	3089	31 41 21	3101	30 13 13	3113
	Aldebaran	E.	67 29 11	3061	66 0 14	3068	64 31 25	3074	63 2 44	3080
13	Venus	W.	96 59 38	3492	98 20 11	3496	99 40 40	3498	101 1 6	3502
	α Aquilæ	W.	72 56 59	3603	74 15 30	3598	75 34 7	3593	76 52 49	3590
	Fomalhaut	W.	48 8 56	3903	49 22 13	3869	50 36 4	3837	51 50 28	3809
	Aldebaran	E.	55 41 10	3110	54 13 13	3115	52 45 22	3121	51 17 38	3126
	Pollux	E.	97 31 3	3093	96 2 45	3096	94 34 30	3099	93 6 19	3101

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Day of the Month.	Star's Name and Position.	Noon.	P.L. of diff.	IIIh.	P.L. of diff.	VIh.	P.L. of diff.	IXh.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
14	Venus W.	102 21 28	3505	103 41 47	3507	105 2 3	3509	106 22 17	3511
	α Aquilæ W.	78 11 34	3586	79 30 24	3584	80 49 16	3580	82 8 12	3579
	Fomalhaut W.	53 5 21	3783	54 20 41	3758	55 36 27	3736	56 52 36	3715
	α Pegasi W.	30 25 44	3635	31 43 40	3591	33 2 24	3553	34 21 50	3518
	Aldebaran E.	49 50 0	3132	48 22 29	3138	46 55 5	3143	45 27 47	3148
	Pollux E.	91 38 11	3104	90 10 6	3105	88 42 3	3108	87 14 3	3110
15	α Aquilæ W.	88 43 13	3575	90 2 15	3575	91 21 16	3575	92 40 17	3576
	Fomalhaut W.	63 18 18	3633	64 36 17	3620	65 54 30	3608	67 12 56	3596
	α Pegasi W.	41 7 10	3397	42 29 30	3379	43 52 10	3364	45 15 8	3349
	Aldebaran E.	38 13 10	3182	36 46 39	3191	35 20 19	3199	33 54 9	3209
	Pollux E.	79 54 32	3117	78 26 43	3117	76 58 54	3118	75 31 6	3119
16	α Aquilæ W.	99 14 54	3589	100 33 41	3593	101 52 23	3598	103 11 0	3602
	Fomalhaut W.	73 47 59	3549	75 7 29	3542	76 27 7	3535	77 46 53	3528
	α Pegasi W.	52 13 48	3291	53 38 10	3282	55 2 43	3272	56 27 27	3264
	Pollux E.	68 12 16	3120	66 44 31	3120	65 16 46	3120	63 49 1	3120
	Regulus E.	105 1 34	3084	103 33 5	3082	102 4 34	3081	100 36 1	3080
17	Fomalhaut W.	84 27 21	3502	85 47 43	3498	87 8 10	3495	88 28 40	3491
	α Pegasi W.	63 33 23	3227	64 59 0	3221	66 24 44	3215	67 50 35	3209
	Pollux E.	56 30 16	3120	55 2 31	3120	53 34 46	3120	52 7 1	3121
	Regulus E.	93 12 47	3070	91 44 1	3067	90 15 11	3065	88 46 19	3063
	Saturn E.	116 0 52	3123	114 33 10	3120	113 5 25	3116	111 37 35	3112
	Jupiter E.	118 10 30	3143	116 43 12	3139	115 15 50	3136	113 48 24	3133
18	α Pegasi W.	75 1 37	3180	76 28 10	3176	77 54 48	3170	79 21 33	3164
	α Arietis W.	31 30 38	3105	32 58 42	3096	34 26 56	3087	35 55 21	3080
	Pollux E.	44 48 27	3125	43 20 47	3127	41 53 10	3129	40 25 36	3132
	Regulus E.	81 21 7	3048	79 51 54	3044	78 22 36	3041	76 53 14	3038
	Saturn E.	104 17 21	3095	102 49 5	3090	101 20 43	3087	99 52 17	3082
	Jupiter E.	106 30 12	3115	105 2 20	3110	103 34 23	3106	102 6 21	3103
19	α Pegasi W.	86 36 52	3139	88 4 14	3134	89 31 42	3129	90 59 17	3124
	α Arietis W.	43 19 46	3043	44 49 6	3036	46 18 34	3029	47 48 11	3022
	Pollux E.	33 8 51	3158	31 41 51	3167	30 15 3	3178	28 48 28	3192
	Regulus E.	69 25 14	3017	67 55 23	3013	66 25 26	3009	64 55 24	3004
	Saturn E.	92 28 48	3060	90 59 49	3056	89 30 45	3050	88 1 34	3045
	Jupiter E.	94 44 53	3079	93 16 18	3075	91 47 38	3069	90 18 51	3064
20	α Arietis W.	55 18 23	2988	56 48 51	2980	58 19 29	2973	59 50 16	2965
	Aldebaran W.	23 21 41	3215	24 47 32	3179	26 14 6	3149	27 41 16	3123
	Regulus E.	57 23 42	2978	55 53 2	2973	54 22 16	2967	52 51 22	2961
	Saturn E.	80 34 2	3017	79 4 11	3011	77 34 12	3005	76 4 6	2999
	Jupiter E.	82 53 15	3036	81 23 47	3030	79 54 11	3023	78 24 27	3017
	Mars E.	118 23 57	3226	116 58 19	3219	115 32 32	3212	114 6 37	3204
21	α Arietis W.	67 26 37	2926	68 58 23	2917	70 30 21	2909	72 2 29	2899
	Aldebaran W.	35 4 9	3022	36 33 54	3005	38 4 0	2990	39 34 25	2976
	Regulus E.	45 15 2	2931	43 43 23	2925	42 11 36	2919	40 39 41	2912
	Saturn E.	68 31 33	2966	67 0 37	2958	65 29 31	2951	63 58 17	2943
	Jupiter E.	70 53 42	2981	69 23 6	2974	67 52 20	2966	66 21 25	2958
	Mars E.	106 54 39	3163	105 27 46	3154	104 0 42	3146	102 33 28	3136
	Sun E.	136 31 35	3288	135 7 9	3279	133 42 33	3269	132 17 45	3259

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			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
14	Venus	W.	107 42 29	3513	109 2 39	3515	110 22 46	3516	111 42 53	3517
	α Aquilæ	W.	83 27 9	3577	84 46 8	3576	86 5 9	3575	87 24 11	3575
	Fomalhaut	W.	58 9 7	3696	59 25 58	3679	60 43 7	3662	62 0 35	3648
	α Pegasi	W.	35 41 54	3488	37 2 31	3462	38 23 38	3438	39 45 12	3416
	Aldebaran	E.	44 0 36	3155	42 33 33	3161	41 6 37	3168	39 39 49	3175
	Pollux	E.	85 46 6	3111	84 18 10	3113	82 50 16	3114	81 22 23	3115
15	α Aquilæ	W.	93 59 17	3578	95 18 15	3580	96 37 11	3583	97 56 4	3586
	Fomalhaut	W.	68 31 35	3586	69 50 25	3575	71 9 27	3566	72 28 38	3557
	α Pegasi	W.	46 38 23	3335	48 1 54	3323	49 25 38	3311	50 49 37	3300
	Aldebaran	E.	32 28 11	3221	31 2 27	3234	29 36 58	3249	28 11 47	3266
	Pollux	E.	74 3 19	3119	72 35 33	3119	71 7 47	3119	69 40 1	3120
16	α Aquilæ	W.	104 29 32	3608	105 47 57	3614	107 6 16	3621	108 24 28	3629
	Fomalhaut	W.	79 6 46	3522	80 26 46	3516	81 46 52	3511	83 7 4	3506
	α Pegasi	W.	57 52 20	3256	59 17 23	3249	60 42 34	3241	62 7 55	3235
	Pollux	E.	62 21 16	3120	60 53 31	3121	59 25 47	3120	57 58 2	3119
	Regulus	E.	99 7 27	3078	97 38 51	3076	96 10 12	3074	94 41 31	3072
17	Fomalhaut	W.	89 49 14	3488	91 9 51	3486	92 30 31	3485	93 51 12	3483
	α Pegasi	W.	69 16 34	3203	70 42 40	3198	72 8 52	3192	73 35 11	3186
	Pollux	E.	50 39 17	3121	49 11 33	3122	47 43 50	3122	46 16 7	3124
	Regulus	E.	87 17 24	3060	85 48 25	3057	84 19 23	3054	82 50 17	3051
	Saturn	E.	110 9 40	3109	108 41 42	3105	107 13 39	3102	105 45 32	3099
	Jupiter	E.	112 20 54	3129	110 53 20	3126	109 25 42	3122	107 57 59	3119
18	α Pegasi	W.	80 48 25	3160	82 15 22	3154	83 42 26	3149	85 9 36	3144
	α Arietis	W.	37 23 55	3072	38 52 39	3064	40 21 33	3057	41 50 35	3050
	Pollux	E.	38 58 5	3134	37 30 37	3139	36 3 15	3144	34 35 59	3151
	Regulus	E.	75 23 48	3034	73 54 17	3030	72 24 41	3026	70 55 0	3022
	Saturn	E.	98 23 46	3078	96 55 10	3074	95 26 28	3069	93 57 41	3064
	Jupiter	E.	100 38 15	3098	99 10 3	3093	97 41 45	3089	96 13 22	3084
19	α Pegasi	W.	92 26 57	3119	93 54 43	3114	95 22 36	3109	96 50 34	3104
	α Arietis	W.	49 17 56	3015	50 47 50	3009	52 17 52	3002	53 48 3	2994
	Pollux	E.	27 22 9	3209	25 56 10	3230	24 30 36	3256	23 5 33	3288
	Regulus	E.	63 25 16	2999	61 55 2	2994	60 24 42	2989	58 54 15	2984
	Saturn	E.	86 32 17	3039	85 2 53	3034	83 33 23	3029	82 3 46	3023
	Jupiter	E.	88 49 57	3059	87 20 57	3053	85 51 50	3048	84 22 37	3041
20	α Arietis	W.	61 21 13	2957	62 52 19	2950	64 23 35	2942	65 55 0	2933
	Aldebaran	W.	29 8 58	3100	30 37 8	3078	32 5 45	3058	33 34 46	3040
	Regulus	E.	51 20 21	2956	49 49 13	2950	48 17 57	2943	46 46 33	2938
	Saturn	E.	74 33 52	2993	73 3 30	2985	71 32 59	2979	70 2 20	2973
	Jupiter	E.	76 54 35	3010	75 24 35	3003	73 54 26	2996	72 24 8	2989
	Mars	E.	112 40 32	3197	111 14 19	3188	109 47 55	3180	108 21 22	3172
21	α Arietis	W.	73 34 49	2890	75 7 20	2880	76 40 4	2872	78 12 59	2862
	Aldebaran	W.	41 5 8	2961	42 36 10	2946	44 7 30	2932	45 39 8	2919
	Regulus	E.	39 7 37	2906	37 35 26	2900	36 3 7	2894	34 30 40	2887
	Saturn	E.	62 26 53	2935	60 55 19	2927	59 23 35	2920	57 51 41	2912
	Jupiter	E.	64 50 20	2950	63 19 5	2942	61 47 39	2934	60 16 3	2925
	Mars	E.	101 6 2	3126	99 38 24	3117	98 10 35	3107	96 42 34	3097
	Sun	E.	130 52 45	3249	129 27 34	3238	128 2 10	3229	126 36 35	3217

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		Noon.	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
22	α Arietis	W.	79 46 7	2852	81 19 28	2842	82 53 2	2832	84 26 49	2821
	Aldebaran	W.	47 11 3	2905	48 43 15	2891	50 15 45	2879	51 48 31	2865
	Regulus	E.	32 58 5	2882	31 25 23	2877	29 52 34	2872	28 19 39	2868
	Saturn	E.	56 19 37	2904	54 47 23	2895	53 14 58	2887	51 42 23	2879
	Jupiter	E.	58 44 16	2916	57 12 17	2908	55 40 8	2898	54 7 46	2890
	Spica	E.	86 49 56	2837	85 16 16	2827	83 42 23	2817	82 8 17	2807
	Mars	E.	95 14 21	3087	93 45 55	3075	92 17 15	3065	90 48 23	3053
	Sun	E.	125 10 46	3206	123 44 44	3196	122 18 30	3184	120 52 1	3172
23	α Arietis	W.	92 19 20	2764	93 54 35	2752	95 30 6	2739	97 5 54	2727
	Aldebaran	W.	59 36 43	2798	61 11 14	2784	62 46 3	2770	64 21 10	2756
	Pollux	W.	18 50 11	3172	20 16 53	3100	21 45 2	3040	23 14 25	2988
	Saturn	E.	43 56 46	2838	42 23 7	2830	40 49 18	2822	39 15 19	2815
	Jupiter	E.	46 23 3	2842	44 49 30	2832	43 15 44	2824	41 41 47	2814
	Spica	E.	74 14 16	2750	72 38 43	2738	71 2 53	2726	69 26 48	2714
	Mars	E.	83 20 27	2994	81 50 7	2981	80 19 31	2969	78 48 39	2955
	Sun	E.	113 35 59	3109	112 8 0	3096	110 39 46	3082	109 11 14	3069
24	Aldebaran	W.	72 21 26	2684	73 58 27	2669	75 35 48	2655	77 13 28	2639
	Pollux	W.	30 55 19	2804	32 29 42	2776	34 4 42	2749	35 40 17	2724
	Saturn	E.	31 23 23	2791	29 48 44	2791	28 14 4	2793	26 39 26	2797
	Jupiter	E.	33 49 10	2775	32 14 9	2768	30 38 59	2764	29 3 44	2761
	Spica	E.	61 22 5	2647	59 44 14	2634	58 6 5	2620	56 27 37	2606
	Mars	E.	71 10 3	2887	69 37 27	2872	68 4 32	2857	66 31 18	2843
	Sun	E.	101 44 15	2995	100 13 56	2980	98 43 18	2964	97 12 20	2949
25	Aldebaran	W.	85 27 3	2563	87 6 49	2547	88 46 57	2531	90 27 27	2516
	Pollux	W.	43 46 6	2612	45 24 44	2591	47 3 51	2572	48 43 25	2551
	Spica	E.	48 10 22	2532	46 29 54	2517	44 49 5	2503	43 7 56	2487
	Mars	E.	58 40 19	2767	57 5 8	2751	55 29 36	2735	53 53 43	2721
	Sun	E.	89 32 27	2867	87 59 26	2849	86 26 2	2833	84 52 17	2816
26	Pollux	W.	57 8 2	2456	58 50 17	2438	60 32 58	2420	62 16 4	2402
	Regulus	W.	20 10 1	2509	21 51 2	2477	23 32 48	2448	25 15 15	2421
	Mars	E.	45 49 13	2644	44 11 18	2629	42 33 2	2615	40 54 27	2601
	Sun	E.	76 57 54	2729	75 21 53	2711	73 45 28	2695	72 8 41	2677
27	Pollux	W.	70 57 55	2316	72 43 31	2300	74 29 31	2283	76 15 55	2268
	Regulus	W.	33 56 9	2311	35 41 52	2292	37 28 3	2274	39 14 41	2256
	Mars	E.	32 36 56	2539	30 56 37	2530	29 16 5	2522	27 35 22	2515
	Sun	E.	63 58 56	2592	62 19 50	2575	60 40 21	2559	59 0 30	2543
28	Pollux	W.	85 13 32	2194	87 2 8	2181	88 51 4	2168	90 40 20	2156
	Regulus	W.	48 14 11	2175	50 3 16	2161	51 52 42	2147	53 42 30	2133
	Saturn	W.	25 15 10	2344	27 0 6	2309	28 45 53	2279	30 32 23	2253
	Jupiter	W.	22 16 42	2363	24 1 10	2327	25 46 31	2295	27 32 38	2266
	Sun	E.	50 35 47	2467	48 53 48	2453	47 11 29	2440	45 28 51	2427
29	Pollux	W.	99 51 0	2103	101 41 55	2094	103 33 4	2086	105 24 24	2079
	Regulus	W.	62 56 19	2075	64 47 57	2065	66 39 50	2056	68 31 58	2048
	Saturn	W.	39 33 33	2153	41 23 12	2138	43 13 13	2124	45 3 35	2111
	Jupiter	W.	36 32 13	2165	38 21 34	2150	40 11 17	2136	42 1 22	2124
	Sun	E.	36 51 21	2371	35 7 4	2362	33 22 34	2353	31 37 52	2346

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.		*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
22	α Arietis	W.	86 0 50	2809	87 35 6	2799	89 9 35	2787	90 44 20	2776
	Aldebaran	W.	53 21 35	2852	54 54 56	2838	56 28 34	2824	58 2 30	2811
	Regulus	E.	26 46 39	2865	25 13 36	2863	23 40 30	2863	22 7 24	2866
	Saturn	E.	50 9 37	2870	48 36 40	2862	47 3 33	2853	45 30 14	2846
	Jupiter	E.	52 35 14	2880	51 2 29	2870	49 29 32	2862	47 56 24	2852
	Spica	E.	80 33 58	2795	78 59 24	2785	77 24 36	2774	75 49 34	2762
	Mars	E.	89 19 16	3043	87 49 56	3031	86 20 22	3018	84 50 32	3006
	Sun	E.	119 25 18	3160	117 58 21	3148	116 31 9	3135	115 3 42	3122
23	α Arietis	W.	98 41 58	2715	100 18 18	2702	101 54 56	2688	103 31 52	2675
	Aldebaran	W.	65 56 35	2742	67 32 19	2728	69 8 22	2714	70 44 44	2699
	Pollux	W.	24 44 53	2943	26 16 18	2903	27 48 33	2866	29 21 35	2834
	Saturn	E.	37 41 11	2809	36 6 55	2802	34 32 30	2798	32 57 59	2794
	Jupiter	E.	40 7 38	2805	38 33 17	2797	36 58 45	2789	35 24 3	2781
	Spica	E.	67 50 26	2701	66 13 47	2688	64 36 51	2675	62 59 37	2661
	Mars	E.	77 17 30	2942	75 46 5	2928	74 14 22	2915	72 42 22	2900
	Sun	E.	107 42 26	3054	106 13 20	3040	104 43 57	3025	103 14 15	3010
24	Aldebaran	W.	78 51 30	2624	80 29 52	2609	82 8 34	2593	83 47 38	2578
	Pollux	W.	37 16 25	2700	38 53 5	2677	40 30 15	2655	42 7 56	2633
	Saturn	E.	25 4 55	2805	23 30 34	2819	21 56 31	2839	20 22 54	2869
	Jupiter	E.	27 28 24	2760	25 53 3	2761	24 17 44	2766	22 42 32	2776
	Spica	E.	54 48 50	2591	53 9 43	2577	51 30 16	2562	49 50 29	2548
	Mars	E.	64 57 46	2828	63 23 54	2818	61 49 42	2798	60 15 11	2782
	Sun	E.	95 41 3	2932	94 9 25	2916	92 37 27	2900	91 5 8	2883
25	Aldebaran	W.	92 8 18	2500	93 49 32	2484	95 31 8	2468	97 13 6	2452
	Pollux	W.	50 23 27	2532	52 3 56	2513	53 44 51	2493	55 26 14	2475
	Spica	E.	41 26 25	2473	39 44 34	2458	38 2 21	2443	36 19 47	2428
	Mars	E.	52 17 31	2705	50 40 57	2689	49 4 3	2674	47 26 48	2659
	Sun	E.	83 18 10	2798	81 43 40	2781	80 8 47	2764	78 33 32	2747
26	Pollux	W.	63 59 36	2384	65 43 33	2366	67 27 56	2350	69 12 43	2333
	Regulus	W.	26 58 19	2396	28 41 59	2374	30 26 11	2352	32 10 55	2331
	Mars	E.	39 15 33	2587	37 36 20	2574	35 56 49	2561	34 17 0	2550
	Sun	E.	70 31 30	2660	68 53 56	2643	67 15 59	2626	65 37 39	2609
27	Pollux	W.	78 2 41	2252	79 49 51	2237	81 37 23	2222	83 25 17	2208
	Regulus	W.	41 1 45	2239	42 49 15	2222	44 37 10	2206	46 25 29	2190
	Mars	E.	25 54 30	2511	24 13 32	2511	22 32 34	2515	20 51 41	2522
	Sun	E.	57 26 16	2527	55 39 41	2512	53 58 44	2497	52 17 26	2482
28	Pollux	W.	92 29 54	2144	94 19 46	2133	96 9 55	2122	98 0 20	2113
	Regulus	W.	55 32 38	2120	57 23 6	2108	59 13 53	2096	61 4 58	2086
	Saturn	W.	32 19 32	2229	34 7 16	2207	35 55 33	2187	37 44 20	2170
	Jupiter	W.	29 19 27	2242	31 6 52	2220	32 54 50	2200	34 43 18	2182
	Sun	E.	43 45 55	2415	42 2 41	2403	40 19 10	2391	38 35 23	2381
29	Pollux	W.	107 15 56	2072	109 7 38	2067	110 59 28	2062	112 51 26	2058
	Regulus	W.	70 24 18	2039	72 16 51	2032	74 9 35	2026	76 2 29	2020
	Saturn	W.	46 54 17	2101	48 45 15	2090	50 36 29	2081	52 27 58	2073
	Jupiter	W.	43 51 45	2113	45 42 25	2102	47 33 22	2093	49 24 32	2085
	Sun	E.	29 52 59	2339	28 7 57	2333	26 22 46	2328	24 37 28	2325

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Day of the Month.	Airy's Day Numbers—For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of E	F	G	H	Value of L
1	1·59611	1·58010	0·37120	1·37370	29·882
2	1·59378	1·58321	0·37169	1·37420	29·709
3	1·59138	1·58626	0·37218	1·37471	29·544
4	1·58893	1·58925	0·37268	1·37521	29·389
5	1·58640	1·59217	0·37318	1·37572	29·243
6	1·58381	1·59502	0·37368	1·37623	29·106
7	1·58117	1·59780	0·37419	1·37673	28·979
8	1·57846	1·60051	0·37471	1·37724	28·861
9	1·57568	1·60316	0·37524	1·37774	28·754
10	1·57285	1·60575	0·37577	1·37825	28·656
11	1·56994	1·60828	0·37630	1·37875	28·568
12	1·56697	1·61074	0·37683	1·37925	28·488
13	1·56394	1·61314	0·37737	1·37974	28·418
14	1·56084	1·61547	0·37791	1·38023	28·358
15	1·55767	1·61773	0·37846	1·38072	28·308
16	1·55444	1·61993	0·37902	1·38121	28·267
17	1·55114	1·62207	0·37958	1·38169	28·237
18	1·54777	1·62414	0·38015	1·38217	28·216
19	1·54435	1·62615	0·38072	1·38264	28·205
20	1·54085	1·62810	0·38129	1·38310	28·203
21	1·53728	1·62998	0·38187	1·38356	28·212
22	1·53364	1·63178	0·38245	1·38401	28·231
23	1·52994	1·63354	0·38304	1·38445	28·259
24	1·52616	1·65525	0·38363	1·38489	28·298
25	1·52231	1·63688	0·38422	1·38532	28·347
26	1·51840	1·63844	0·38482	1·38574	28·406
27	1·51441	1·63995	0·38542	1·38616	28·475
28	1·51035	1·64140	0·38602	1·38657	28·554
29	1·50623	1·64279	0·38663	1·38697	28·641
30	1·50203	1·64411	0·38724	1·38736	28·738
31	1·49776	1·64537	0·38785	1·38774	28·846

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Day of the Month.	Bessel's Day Numbers— For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of A	B	C	D	Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0d·065193. Days.	From Mean Noon of January 1. Day of the Year.	Fraction of the Year.*
					h m s			
1	+1·1600	+1·1149	+0·0610	−0·1326	9 15 27·62	223	304	·8323
2	1·1536	1·1239	0·0620	0·1237	9 11 31·71	224	305	·8351
3	1·1470	1·1326	0·0630	0·1147	9 7 35·81	225	306	·8378
4	+1·1401	+1·1411	+0·0640	−0·1054	9 3 39·90	226	307	·8405
5	1·1330	1·1492	0·0650	0·0958	8 59 43·99	227	308	·8433
6	1·1256	1·1570	0·0660	0·0861	8 55 48·08	228	309	·8460
7	+1·1180	+1·1646	+0·0671	−0·0761	8 51 52·17	229	310	·8488
8	1·1100	1·1720	0·0681	0·0658	8 47 56·26	230	311	·8515
9	1·1018	1·1790	0·0692	0·0554	8 44 0·35	231	312	·8542
10	+1·0933	+1·1859	+0·0702	−0·0447	8 40 4·44	232	313	·8570
11	1·0845	1·1925	0·0713	0·0337	8 36 8·53	233	314	·8597
12	1·0754	1·1989	0·0724	0·0225	8 32 12·62	234	315	·8624
13	+1·0659	+1·2050	+0·0735	−0·0111	8 28 16·71	235	316	·8652
14	1·0561	1·2110	0·0746	9·9994	8 24 20·80	236	317	·8679
15	1·0459	1·2167	0·0757	9·9875	8 20 24·89	237	318	·8707
16	+1·0353	+1·2222	+0·0768	−9·9753	8 16 28·98	238	319	·8734
17	1·0243	1·2275	0·0779	9·9629	8 12 33·07	239	320	·8761
18	1·0128	1·2327	0·0791	9·9503	8 8 37·16	240	321	·8789
19	+1·0010	+1·2376	+0·0802	−9·9374	8 4 41·25	241	322	·8816
20	0·9886	1·2423	0·0813	9·9242	8 0 45·33	242	323	·8843
21	0·9757	1·2469	0·0825	9·9108	7 56 49·42	243	324	·8871
22	+0·9624	+1·2513	+0·0836	−9·8971	7 52 53·51	244	325	·8898
23	0·9484	1·2556	0·0848	9·8833	7 48 57·60	245	326	·8926
24	0·9338	1·2596	0·0860	9·8691	7 45 1·69	246	327	·8953
25	+0·9186	+1·2634	+0·0872	−9·8547	7 41 5·78	247	328	·8980
26	0·9026	1·2671	0·0883	9·8401	7 37 9·87	248	329	·9008
27	0·8859	1·2706	0·0895	9·8253	7 33 13·96	249	330	·9035
28	+0·8684	+1·2740	+0·0907	−9·8103	7 29 18·05	250	331	·9062
29	0·8500	1·2772	0·0919	9·7950	7 25 22·13	251	332	·9090
30	0·8307	1·2803	0·0931	9·7795	7 21 26·22	252	333	·9117
31	+0·8102	+1·2832	+0·0943	−9·7638	7 17 30·31	253	334	·9145

* Add ·0031 if Fraction be required for the time *t*, see page 327.

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AT APPARENT NOON.

Day of the Week.	Day of the Month.	THE SUN'S Apparent Right Ascension.	Diff. for 1 hour.	THE SUN'S Apparent Declination.	Diff. for 1 hour.	Sidereal Time of the Semidiam. passing the Meridian.*	Equation of Time, *to be subt. from* / *added to Apparent Time.*	Diff. for 1 hour.
		h m s	s	° ′ ″	″	m s	m s	s
Sun.	1	16 30 35·16	10·827	S. 21 52 1·0	22·52	1 10·32	10 40·90	0·968
Mon.	2	16 34 55·00	10·852	22 1 1·5	21·46	1 10·40	10 17·68	0·993
Tues.	3	16 39 15·46	10·876	22 9 36·5	20·38	1 10·48	9 53·85	1·017
Wed.	4	16 43 36·49	10·899	22 17 45·7	19·29	1 10·56	9 29·44	1·040
Thur.	5	16 47 58·08	10·922	22 25 29·0	18·20	1 10·64	9 4·48	1·063
Frid.	6	16 52 20·20	10·943	22 32 45·9	17·10	1 10·71	8 38·98	1·084
Sat.	7	16 56 42·83	10·963	22 39 36·3	15·99	1 10·78	8 12·98	1·103
Sun.	8	17 1 5·93	10·981	22 46 0·1	14·87	1 10·84	7 46·51	1·121
Mon.	9	17 5 29·47	10·998	22 51 56·9	13·74	1 10·90	7 19·61	1·138
Tues.	10	17 9 53·41	11·014	22 57 26·7	12·60	1 10·96	6 52·30	1·154
Wed.	11	17 14 17·74	11·028	23 2 29·2	11·46	1 11·01	6 24·60	1·168
Thur.	12	17 18 42·41	11·041	23 7 4·3	10·31	1 11·06	5 56·56	1·181
Frid.	13	17 23 7·41	11·054	23 11 11·8	9·16	1 11·10	5 28·20	1·194
Sat.	14	17 27 32·71	11·065	23 14 51·6	8·00	1 11·14	4 59·54	1·205
Sun.	15	17 31 58·27	11·075	23 18 3·6	6·84	1 11·18	4 30·62	1·215
Mon.	16	17 36 24·07	11·084	23 20 47·7	5·67	1 11·21	4 1·45	1·223
Tues.	17	17 40 50·07	11·091	23 23 3·7	4·50	1 11·23	3 32·08	1·230
Wed.	18	17 45 16·25	11·097	23 24 51·7	3·33	1 11·25	3 2·55	1·236
Thur.	19	17 49 42·59	11·102	23 26 11·4	2·15	1 11·27	2 32·86	1·242
Frid.	20	17 54 9·04	11·106	23 27 2·9	0·97	1 11·28	2 3·05	1·246
Sat.	21	17 58 35·57	11·108	23 27 26·1	0·21	1 11·29	1 33·15	1·248
Sun.	22	18 3 2·16	11·109	23 27 21·0	1·40	1 11·29	1 3·20	1·249
Mon.	23	18 7 28·78	11·109	23 26 47·5	2·58	1 11·28	0 33·23	1·249
Tues.	24	18 11 55·39	11·107	23 25 45·7	3·76	1 11·28	0 3·26	1·247
Wed.	25	18 16 21·95	11·104	23 24 15·6	4·93	1 11·27	0 26·67	1·244
Thur.	26	18 20 48·44	11·099	23 22 17·2	6·11	1 11·26	0 56·52	1·239
Frid.	27	18 25 14·82	11·093	23 19 50·5	7·28	1 11·24	1 26·25	1·233
Sat.	28	18 29 41·04	11·085	23 16 55·7	8·45	1 11·21	1 55·84	1·225
Sun.	29	18 34 7·08	11·076	23 13 32·8	9·62	1 11·18	2 25·25	1·216
Mon.	30	18 38 32·90	11·065	23 9 41·9	10·78	1 11·15	2 54·43	1·205
Tues.	31	18 42 58·46	11·053	23 5 23·2	11·94	1 11·11	3 23·35	1·192
Wed.	32	18 47 23·72		S. 23 0 36·6		1 11·07	3 51·96	

Mean Time of the Semidiameter passing may be found by subtracting 0ˢ·19 from the *Sidereal* Time.

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AT MEAN NOON.

Day of the Week.	Day of the Month.	THE SUN'S *Apparent* Right Ascension.	THE SUN'S *Apparent* Declination.	THE SUN'S Semidiam.*	Equation of Time, *to be added to* / *subt. from Mean Time.*	Sidereal Time.
		h m s	° ′ ″	′ ″	m s	h m s
Sun.	1	16 30 37·09	S. 21 52 5·0	16 15·9	10 40·73	16 41 17·82
Mon.	2	16 34 56·86	22 1 5·2	16 16·0	10 17·51	16 45 14·38
Tues.	3	16 39 17·25	22 9 39·9	16 16·1	9 53·68	16 49 10·93
Wed.	4	16 43 38·21	22 17 48·8	16 16·3	9 29·28	16 53 7·49
Thur.	5	16 47 59·73	22 25 31·7	16 16·4	9 4·32	16 57 4·05
Frid.	6	16 52 21·78	22 32 48·3	16 16·6	8 38·83	17 1 0·61
Sat.	7	16 56 44·33	22 39 38·5	16 16·7	8 12·83	17 4 57·16
Sun.	8	17 1 7·35	22 46 2·0	16 16·8	7 46·37	17 8 53·72
Mon.	9	17 5 30·81	22 51 58·6	16 16·9	7 19·47	17 12 50·28
Tues.	10	17 9 54·67	22 57 28·1	16 17·0	6 52·17	17 16 46·84
Wed.	11	17 14 18·92	23 2 30·4	16 17·1	6 24·48	17 20 43·40
Thur.	12	17 18 43·51	23 7 5·3	16 17·3	5 56·45	17 24 39·95
Frid.	13	17 23 8·42	23 11 12·6	16 17·4	5 28·09	17 28 36·51
Sat.	14	17 27 33·63	23 14 52·3	16 17·5	4 59·44	17 32 33·07
Sun.	15	17 31 59·10	23 18 4·1	16 17·6	4 30·53	17 36 29·63
Mon.	16	17 36 24·81	23 20 48·0	16 17·6	4 1·37	17 40 26·19
Tues.	17	17 40 50·73	23 23 3·9	16 17·7	3 32·01	17 44 22·74
Wed.	18	17 45 16·82	23 24 51·8	16 17·8	3 2·48	17 48 19·30
Thur.	19	17 49 43·06	23 26 11·5	16 17·9	2 32·80	17 52 15·86
Frid.	20	17 54 9·42	23 27 3·0	16 17·9	2 3·00	17 56 12·42
Sat.	21	17 58 35·86	23 27 26·2	16 18·0	1 33·12	18 0 8·98
Sun.	22	18 3 2·36	23 27 21·0	16 18·0	1 3·18	18 4 5·54
Mon.	23	18 7 28·88	23 26 47·5	16 18·1	0 33·22	18 8 2·10
Tues.	24	18 11 55·40	23 25 45·7	16 18·1	0 3·26	18 11 58·65
Wed.	25	18 16 21·87	23 24 15·6	16 18·1	0 26·66	18 15 55·21
Thur.	26	18 20 48·27	23 22 17·3	16 18·1	0 56·59	18 19 51·77
Frid.	27	18 25 14·55	23 19 50·7	16 18·1	1 26·23	18 23 48·33
Sat.	28	18 29 40·69	23 16 55·9	16 18·2	1 55·81	18 27 44·88
Sun.	29	18 34 6·64	23 13 33·1	16 18·2	2 25·20	18 31 41·44
Mon.	30	18 38 32·37	23 9 42·4	16 18·2	2 54·37	18 35 38·00
Tues.	31	18 42 57·84	23 5 23·9	16 18·2	3 23·28	18 39 34·56
Wed.	32	18 47 23·01	S. 23 0 37·4	16 18·2	3 51·89	18 43 31·12

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

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MEAN TIME.

Day of the Month.	THE SUN'S Apparent Longitude. Noon.	THE SUN'S Apparent Latitude. Noon.	Logarithm of the Radius Vector of the Earth. Noon.	THE MOON'S Semidiameter. Noon.	THE MOON'S Semidiameter. Midnight.	THE MOON'S Horizontal Parallax. Noon.	THE MOON'S Horizontal Parallax. Midnight.
	° ′ ″	″		′ ″	′ ″	′ ″	′ ″
1	249 20 21·6	S. 0·57	9·9937079	16 42·7	16 41·3	61 11·3	61 6·1
2	250 21 16·0	0·45	9·9936435	16 38·6	16 34·6	60 56·2	60 41·7
3	251 22 11·4	0·32	9·9935804	16 29·6	16 23·6	60 23·3	60 1·3
4	252 23 7·7	0·20	9·9935186	16 16·8	16 9·5	59 36·5	59 9·7
5	253 24 5·0	S. 0·08	9·9934581	16 1·7	15 53·8	58 41·4	58 12·4
6	254 25 3·1	N. 0·04	9·9933991	15 45·9	15 38·1	57 43·3	57 14·9
7	255 26 1·9	0·14	9·9933418	15 30·6	15 23·5	56 47·4	56 21·4
8	256 27 1·3	0·23	9·9932863	15 16·9	15 10·9	55 57·2	55 35·1
9	257 28 1·2	0·29	9·9932327	15 5·4	15 0·6	55 15·2	54 57·7
10	258 29 1·7	0·31	9·9931812	14 56·5	14 53·1	54 42·6	54 30·0
11	259 30 2·8	0·30	9·9931320	14 50·3	14 48·1	54 19·8	54 11·9
12	260 31 4·4	0·27	9·9930850	14 46·6	14 45·7	54 6·4	54 3·1
13	261 32 6·5	0·20	9·9930404	14 45·4	14 45·6	54 1·7	54 2·4
14	262 33 9·0	N. 0·11	9·9929984	14 46·2	14 47·3	54 4·8	54 8·7
15	263 34 12·1	S. 0·01	9·9929590	14 48·7	14 50·6	54 14·1	54 20·9
16	264 35 15·7	0·13	9·9929223	14 52·8	14 55·2	54 28·8	54 37·8
17	265 36 19·8	0·26	9·9928883	14 57·9	15 0·9	54 47·7	54 58·6
18	266 37 24·4	0·40	9·9928571	15 4·1	15 7·4	55 10·2	55 22·5
19	267 38 29·7	0·53	9·9928288	15 10·9	15 14·7	55 35·4	55 49·0
20	268 39 35·7	0·66	9·9928032	15 18·6	15 22·6	56 3·3	56 18·2
21	269 40 42·2	0·76	9·9927803	15 26·9	15 31·3	56 33·8	56 50·0
22	270 41 49·3	0·84	9·9927600	15 35·9	15 40·7	57 6·8	57 24·2
23	271 42 57·1	0·89	9·9927422	15 45·5	15 50·6	57 42·1	58 0·5
24	272 44 5·5	0·92	9·9927267	15 55·7	16 0·8	58 19·1	58 37·8
25	273 45 14·5	0·92	9·9927134	16 5·8	16 10·6	58 56·2	59 14·0
26	274 46 24·1	0·88	9·9927023	16 15·3	16 19·5	59 30·9	59 46·5
27	275 47 34·1	0·81	9·9926931	16 23·2	16 26·4	60 0·1	60 11·5
28	276 48 44·5	0·72	9·9926858	16 28·7	16 30·2	60 20·2	60 25·7
29	277 49 55·3	0·61	9·9926803	16 30·8	16 30·4	60 27·8	60 26·2
30	278 51 6·3	0·48	9·9926766	16 28·9	16 26·4	60 20·8	60 11·5
31	279 52 17·5	0·35	9·9926747	16 22·8	16 18·4	59 58·6	59 42·3
32	280 53 28·7	S. 0·23	9·9926745	16 13·1	16 7·2	59 23·1	59 1·3

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THE MOON'S

Day of the Week.	Day of the Month.	Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.	Age. Noon.	Meridian Passage.
		° ′ ″	° ′ ″	° ′ ″	° ′ ″	d	h m
Sun.	1	240 56 35·5	248 30 35·7	S. 2 53 36·7	S. 2 17 33·2	28·8	6
Mon.	2	256 2 20·6	263 30 41·9	1 39 14·4	S. 0 59 27·8	0·4	0 14·0
Tues.	3	270 54 38·5	278 13 19·2	S. 0 19 2·3	N. 0 21 15·3	1·4	1 18·1
Wed.	4	285 26 3·6	292 32 22·3	N. 1 0 41·0	1 38 35·8	2·4	2 18·8
Thur.	5	299 31 57·5	306 24 41·5	2 14 26·3	2 47 44·5	3·4	3 14·8
Frid.	6	313 10 36·1	319 49 51·6	3 18 7·4	3 45 18·9	4·4	4 5·8
Sat.	7	326 22 44·8	332 49 38·4	4 9 6·0	4 29 20·7	5·4	4 52·8
Sun.	8	339 10 58·9	345 27 16·0	4 45 58·2	4 58 56·6	6·4	5 36·8
Mon.	9	351 39 2·0	357 46 49·9	5 8 15·0	5 13 55·8	7·4	6 19·1
Tues.	10	3 51 13·4	9 52 45·7	5 16 2·2	5 14 38·0	8·4	7 0·8
Wed.	11	15 51 59·2	21 49 25·9	5 9 48·5	5 1 39·5	9·4	7 42·9
Thur.	12	27 45 35·4	33 40 56·0	4 50 18·3	4 35 52·2	10·4	8 26·2
Frid.	13	39 35 54·1	45 30 54·3	4 18 30·0	3 58 21·5	11·4	9 11·4
Sat.	14	51 26 18·8	57 22 28·1	3 35 37·9	3 10 31·1	12·4	9 58·8
Sun.	15	63 19 40·4	69 18 12·4	2 43 14·9	2 14 4·6	13·4	10 48·1
Mon.	16	75 18 19·0	81 20 13·5	1 43 16·6	1 11 9·2	14·4	11 38·8
Tues.	17	87 24 8·4	93 30 15·0	N. 0 38 2·2	N. 0 4 16·1	15·4	12 30·0
Wed.	18	99 38 43·7	105 49 45·0	S. 0 29 46·6	S. 1 3 43·0	16·4	13 20·6
Thur.	19	112 3 29·1	118 20 6·0	1 37 9·0	2 9 40·3	17·4	14 10·0
Frid.	20	124 39 46·5	131 2 41·1	2 40 52·3	3 10 20·2	18·4	14 57·9
Sat.	21	137 29 1·2	143 58 57·9	3 37 39·4	4 2 26·0	19·4	15 44·7
Sun.	22	150 32 42·3	157 10 25·1	4 24 17·0	4 42 50·0	20·4	16 30·9
Mon.	23	163 52 16·0	170 38 22·9	4 57 44·3	5 8 41·2	21·4	17 17·6
Tues.	24	177 28 51·6	184 23 45·4	5 15 23·8	5 17 38·3	22·4	18 5·8
Wed.	25	191 23 2·8	198 26 38·6	5 15 14·1	5 8 4·6	23·4	18 56·7
Thur.	26	205 34 22·1	212 45 56·6	4 56 7·5	4 39 26·1	24·4	19 51·4
Frid.	27	220 0 59·5	227 19 1·3	4 18 9·9	3 52 34·1	25·4	20 50·2
Sat.	28	234 39 26·0	242 1 31·5	3 23 1·0	2 49 58·8	26·4	21 52·4
Sun.	29	249 24 30·8	256 47 32·9	2 14 2·0	1 35 50·1	27·4	22 56·0
Mon.	30	264 9 44·4	271 30 11·4	S. 0 56 6·4	S. 0 15 36·4	28·4	23 58·6
Tues.	31	278 48 1·0	286 2 24·0	N. 0 24 54·5	N. 1 4 41·5	29·4	6
Wed.	32	293 12 35·3	300 17 56·6	N. 1 43 3·1	N. 2 19 22·0	0·9	0 57·7

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SUNDAY 1.				*TUESDAY* 3.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	15 52 35·87	S. 23 11 35·5	50·46	0	18 3 58·83	S. 23 46 18·0	37·13
1	15 55 19·62	23 16 38·3	48·68	1	18 6 39·35	23 42 35·2	38·82
2	15 58 3·55	23 21 30·4	46·89	2	18 9 19·56	23 38 42·3	40·49
3	16 0 47·65	23 26 11·8	45·10	3	18 11 59·44	23 34 39·4	42·15
4	16 3 31·92	23 30 42·4	43·29	4	18 14 38·99	23 30 26·5	43·79
5	16 6 16·34	23 35 2·1	41·48	5	18 17 18·20	23 26 3·7	45·42
6	16 9 0·91	23 39 11·0	39·65	6	18 19 57·07	23 21 31·1	47·04
7	16 11 45·61	23 43 8·9	37·83	7	18 22 35·58	23 16 48·9	48·64
8	16 14 30·43	23 46 55·9	35·99	8	18 25 13·73	23 11 57·1	50·24
9	16 17 15·36	23 50 31·8	34·15	9	18 27 51·51	23 6 55·7	51·81
10	16 20 0·39	23 53 56·7	32·31	10	18 30 28·92	23 1 44·8	53·37
11	16 22 45·52	23 57 10·6	30·46	11	18 33 5·94	22 56 24·6	54·92
12	16 25 30·73	24 0 13·3	28·60	12	18 35 42·57	22 50 55·1	56·45
13	16 28 16·01	24 3 4·9	26·73	13	18 38 18·81	22 45 16·4	57·96
14	16 31 1·35	24 5 45·3	24·87	14	18 40 54·65	22 39 28·7	59·46
15	16 33 46·73	24 8 14·5	23·00	15	18 43 30·09	22 33 31·9	60·94
16	16 36 32·15	24 10 32·5	21·13	16	18 46 5·12	22 27 26·2	62·41
17	16 39 17·60	24 12 39·3	19·26	17	18 48 39·73	22 21 11·7	63·86
18	16 42 3·06	24 14 34·8	17·39	18	18 51 13·93	22 14 48·6	65·29
19	16 44 48·52	24 16 19·1	15·51	19	18 53 47·70	22 8 16·9	66·71
20	16 47 33·98	24 17 52·2	13·64	20	18 56 21·04	22 1 36·7	68·11
21	16 50 19·42	24 19 14·0	11·76	21	18 58 53·94	21 54 48·0	69·49
22	16 53 4·83	24 20 24·6	9·89	22	19 1 26·41	21 47 51·0	70·85
23	16 55 50·20	S. 24 21 23·9	8·01	23	19 3 58·44	S. 21 40 45·9	72·21
	MONDAY 2.				*WEDNESDAY* 4.		
0	16 58 35·51	S. 24 22 12·0	6·13	0	19 6 30·03	S. 21 33 32·7	73·54
1	17 1 20·76	24 22 48·8	4·26	1	19 9 1·17	21 26 11·5	74·85
2	17 4 5·93	24 23 14·4	2·39	2	19 11 31·85	21 18 42·4	76·14
3	17 6 51·02	24 23 28·7	0·53	3	19 14 2·08	21 11 5·5	77·42
4	17 9 36·01	24 23 31·9	1·33	4	19 16 31·85	21 3 21·0	78·68
5	17 12 20·89	24 23 23·9	3·19	5	19 19 1·17	20 55 28·9	79·93
6	17 15 5·65	24 23 4·8	5·04	6	19 21 30·03	20 47 29·3	81·16
7	17 17 50·27	24 22 34·5	6·89	7	19 23 58·42	20 39 22·4	82·37
8	17 20 34·76	24 21 53·2	8·73	8	19 26 26·34	20 31 8·2	83·56
9	17 23 19·10	24 21 0·8	10·57	9	19 28 53·80	20 22 46·8	84·73
10	17 26 3·27	24 19 57·4	12·40	10	19 31 20·79	20 14 18·4	85·89
11	17 28 47·27	24 18 43·0	14·23	11	19 33 47·32	20 5 43·1	87·03
12	17 31 31·09	24 17 17·6	16·04	12	19 36 13·37	19 57 1·0	88·15
13	17 34 14·72	24 15 41·3	17·85	13	19 38 38·95	19 48 12·1	89·25
14	17 36 58·15	24 13 54·2	19·65	14	19 41 4·06	19 39 16·6	90·33
15	17 39 41·36	24 11 56·3	21·44	15	19 43 28·70	19 30 14·6	91·40
16	17 42 24·35	24 9 47·6	23·23	16	19 45 52·87	19 21 6·2	92·45
17	17 45 7·09	24 7 28·2	25·00	17	19 48 16·57	19 11 51·5	93·49
18	17 47 49·59	24 4 58·2	26·77	18	19 50 39·79	19 2 30·6	94·50
19	17 50 31·83	24 2 17·6	28·52	19	19 53 2·54	18 53 3·5	95·50
20	17 53 13·81	23 59 26·5	30·27	20	19 55 24·82	18 43 30·5	96·48
21	17 55 55·50	23 56 24·9	32·00	21	19 57 46·63	18 33 51·6	97·44
22	17 58 36·91	23 53 12·9	33·72	22	20 0 7·97	18 24 7·0	98·38
23	18 1 18·02	23 49 50·6	35·42	23	20 2 28·84	18 14 16·7	99·32
24	18 3 58·83	S. 23 46 18·0		24	20 4 49·23	S. 18 4 20·8	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	THURSDAY 5.				*SATURDAY 7.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	20 4 49·23	S. 18 4 20·8	100·23	0	21 48 45·91	S. 8 49 29·9	126·09
1	20 7 9·16	17 54 19·4	101·12	1	21 50 46·82	8 36 53·3	126·31
2	20 9 28·62	17 44 12·7	102·00	2	21 52 47·43	8 24 15·4	126·53
3	20 11 47·62	17 34 0·7	102·86	3	21 54 47·75	8 11 36·3	126·73
4	20 14 6·15	17 23 43·6	103·70	4	21 56 47·78	7 58 55·9	126·92
5	20 16 24·22	17 13 21·4	104·53	5	21 58 47·52	7 46 14·4	127·10
6	20 18 41·84	17 2 54·2	105·34	6	22 0 46·99	7 33 31·8	127·27
7	20 20 58·99	16 52 22·2	106·13	7	22 2 46·18	7 20 48·1	127·43
8	20 23 15·69	16 41 45·4	106·91	8	22 4 45·10	7 8 3·5	127·58
9	20 25 31·94	16 31 4·0	107·67	9	22 6 43·76	6 55 18·0	127·72
10	20 27 47·74	16 20 18·0	108·41	10	22 8 42·15	6 42 31·7	127·85
11	20 30 3·09	16 9 27·5	109·14	11	22 10 40·29	6 29 44·6	127·97
12	20 32 17·99	15 58 32·7	109·85	12	22 12 38·18	6 16 56·7	128·08
13	20 34 32·45	15 47 33·6	110·54	13	22 14 35·82	6 4 8·2	128·19
14	20 36 46·47	15 36 30·4	111·23	14	22 16 33·22	5 51 19·1	128·28
15	20 39 0·05	15 25 23·0	111·89	15	22 18 30·38	5 38 29·4	128·36
16	20 41 13·20	15 14 11·6	112·54	16	22 20 27·31	5 25 39·2	128·44
17	20 43 25·91	15 2 56·4	113·18	17	22 22 24·01	5 12 48·6	128·50
18	20 45 38·20	14 51 37·3	113·80	18	22 24 20·49	4 59 57·6	128·56
19	20 47 50·06	14 40 14·5	114·40	19	22 26 16·75	4 47 6·2	128·61
20	20 50 1·50	14 28 48·1	115·00	20	22 28 12·79	4 34 14·5	128·65
21	20 52 12·52	14 17 18·1	115·57	21	22 30 8·62	4 21 22·6	128·68
22	20 54 23·13	14 5 44·7	116·13	22	22 32 4·24	4 8 30·6	128·70
23	20 56 33·33	S. 13 54 7·9	116·68	23	22 33 59·67	S. 3 55 38·4	128·71
	FRIDAY 6.				*SUNDAY 8.*		
0	20 58 43·11	S. 13 42 27·8	117·22	0	22 35 54·90	S. 3 42 46·1	128·72
1	21 0 52·49	13 30 44·5	117·74	1	22 37 49·94	3 29 53·8	128·72
2	21 3 1·48	13 18 58·1	118·24	2	22 39 44·80	3 17 1·5	128·71
3	21 5 10·06	13 7 8·6	118·73	3	22 41 39·47	3 4 9·3	128·69
4	21 7 18·25	12 55 16·2	119·21	4	22 43 33·97	2 51 17·2	128·66
5	21 9 26·05	12 43 20·9	119·68	5	22 45 28·29	2 38 25·2	128·62
6	21 11 33·47	12 31 22·8	120·13	6	22 47 22·44	2 25 33·5	128·58
7	21 13 40·50	12 19 22·1	120·56	7	22 49 16·43	2 12 42·0	128·53
8	21 15 47·16	12 7 18·7	120·99	8	22 51 10·26	1 59 50·8	128·47
9	21 17 53·45	11 55 12·7	121·40	9	22 53 3·94	1 47 0·0	128·40
10	21 19 59·37	11 43 4·3	121·79	10	22 54 57·47	1 34 9·6	128·33
11	21 22 4·92	11 30 53·6	122·18	11	22 56 50·85	1 21 19·6	128·24
12	21 24 10·11	11 18 40·5	122·55	12	22 58 44·09	1 8 30·1	128·15
13	21 26 14·95	11 6 25·2	122·91	13	23 0 37·20	0 55 41·2	128·06
14	21 28 19·43	10 54 7·7	123·26	14	23 2 30·17	0 42 52·8	127·95
15	21 30 23·57	10 41 48·1	123·60	15	23 4 23·02	0 30 5·1	127·84
16	21 32 27·36	10 29 26·5	123·92	16	23 6 15·75	0 17 18·1	127·72
17	21 34 30·82	10 17 3·0	124·22	17	23 8 8·36	S. 0 4 31·8	127·60
18	21 36 33·94	10 4 37·6	124·53	18	23 10 0·85	N. 0 8 13·8	127·47
19	21 38 36·73	9 52 10·4	124·82	19	23 11 53·23	0 20 58·6	127·33
20	21 40 39·20	9 39 41·5	125·10	20	23 13 45·51	0 33 42·6	127·18
21	21 42 41·35	9 27 10·9	125·36	21	23 15 37·69	0 46 25·7	127·03
22	21 44 43·18	9 14 38·8	125·61	22	23 17 29·77	0 59 7·9	126·87
23	21 46 44·70	9 2 5·1	125·86	23	23 19 21·76	1 11 49·1	126·70
24	21 48 45·91	S. 8 49 29·9		24	23 21 13·66	N. 1 24 29·3	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	MONDAY 9.				*WEDNESDAY* 11.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	23 21 13·66	N. 1 24 29·3	126·53	0	0 50 21·55	N.11 0 29·3	110·75
1	23 23 5·48	1 37 8·5	126·35	1	0 52 14·03	11 11 33·8	110·27
2	23 24 57·22	1 49 46·6	126·16	2	0 54 6·60	11 22 35·5	109·79
3	23 26 48·88	2 2 23·6	125·97	3	0 55 59·28	11 33 34·2	109·29
4	23 28 40·47	2 14 59·4	125·77	4	0 57 52·07	11 44 29·9	108·80
5	23 30 32·00	2 27 34·0	125·56	5	0 59 44·97	11 55 22·7	108·29
6	23 32 23·47	2 40 7·4	125·35	6	1 1 37·98	12 6 12·5	107·78
7	23 34 14·88	2 52 39·5	125·13	7	1 3 31·11	12 16 59·1	107·26
8	23 36 6·23	3 5 10·3	124·91	8	1 5 24·35	12 27 42·7	106·73
9	23 37 57·53	3 17 39·8	124·67	9	1 7 17·72	12 38 23·1	106·20
10	23 39 48·79	3 30 7·9	124·44	10	1 9 11·21	12 49 0·3	105·67
11	23 41 40·00	3 42 34·5	124·19	11	1 11 4·83	12 59 34·3	105·12
12	23 43 31·18	3 54 59·6	123·94	12	1 12 58·58	13 10 5·0	104·57
13	23 45 22·33	4 7 23·2	123·68	13	1 14 52·46	13 20 32·5	104·02
14	23 47 13·45	4 19 45·3	123·42	14	1 16 46·48	13 30 56·6	103·46
15	23 49 4·54	4 32 5·8	123·15	15	1 18 40·64	13 41 17·3	102·89
16	23 50 55·61	4 44 24·7	122·87	16	1 20 34·94	13 51 34·6	102·31
17	23 52 46·66	4 56 41·9	122·59	17	1 22 29·38	14 1 48·5	101·73
18	23 54 37·70	5 8 57·5	122·30	18	1 24 23·97	14 11 58·9	101·14
19	23 56 28·73	5 21 11·3	122·00	19	1 26 18·70	14 22 5·7	100·54
20	23 58 19·76	5 33 23·3	121·70	20	1 28 13·59	14 32 9·0	99·94
21	0 0 10·78	5 45 33·5	121·39	21	1 30 8·63	14 42 8·7	99·33
22	0 2 1·81	5 57 41·8	121·08	22	1 32 3·83	14 52 4·7	98·72
23	0 3 52·85	N. 6 9 48·3	120·76	23	1 33 59·19	N.15 1 57·0	98·10
	TUESDAY 10.				*THURSDAY* 12.		
0	0 5 43·89	N. 6 21 52·8	120·43	0	1 35 54·70	N.15 11 45·5	97·47
1	0 7 34·95	6 33 55·4	120·10	1	1 37 50·38	15 21 30·3	96·83
2	0 9 26·03	6 45 56·0	119·76	2	1 39 46·23	15 31 11·3	96·19
3	0 11 17·13	6 57 54·5	119·41	3	1 41 42·24	15 40 48·4	95·54
4	0 13 8·25	7 9 51·0	119·06	4	1 43 38·42	15 50 21·7	94·87
5	0 14 59·40	7 21 45·4	118·70	5	1 45 34·77	15 59 51·0	94·22
6	0 16 50·58	7 33 37·6	118·34	6	1 47 31·30	16 9 16·3	93·55
7	0 18 41·80	7 45 27·7	117·97	7	1 49 28·01	16 18 37·6	92·88
8	0 20 33·06	7 57 15·5	117·59	8	1 51 24·89	16 27 54·9	92·20
9	0 22 24·36	8 9 1·0	117·21	9	1 53 21·95	16 37 8·1	91·51
10	0 24 15·71	8 20 44·3	116·82	10	1 55 19·19	16 46 17·2	90·81
11	0 26 7·11	8 32 25·3	116·43	11	1 57 16·61	16 55 22·0	90·10
12	0 27 58·57	8 44 3·9	116·03	12	1 59 14·21	17 4 22·6	89·40
13	0 29 50·08	8 55 40·1	115·62	13	2 1 12·00	17 13 19·0	88·68
14	0 31 41·66	9 7 13·8	115·21	14	2 3 9·98	17 22 11·1	87·96
15	0 33 33·30	9 18 45·1	114·79	15	2 5 8·15	17 30 58·8	87·23
16	0 35 25·01	9 30 13·9	114·37	16	2 7 6·50	17 39 42·2	86·49
17	0 37 16·79	9 41 40·1	113·94	17	2 9 5·05	17 48 21·1	85·74
18	0 39 8·65	9 53 3·7	113·50	18	2 11 3·79	17 56 55·6	84·99
19	0 41 0·58	10 4 24·7	113·06	19	2 13 2·73	18 5 25·6	84·23
20	0 42 52·59	10 15 43·1	112·61	20	2 15 1·86	18 13 51·0	83·47
21	0 44 44·69	10 26 58·8	112·15	21	2 17 1·19	18 22 11·8	82·70
22	0 46 36·88	10 38 11·7	111·69	22	2 19 0·72	18 30 28·0	81·92
23	0 48 29·17	10 49 21·9	111·21	23	2 21 0·45	18 38 39·5	81·13
24	0 50 21·55	N.11 0 29·3		24	2 23 0·37	N.18 46 46·3	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 13.		
	h m s	° ′ ″	″
0	2 23 0·37	N.18 46 46·3	80·34
1	2 25 0·50	18 54 48·4	79·54
2	2 27 0·83	19 2 45·7	78·74
3	2 29 1·36	19 10 38·1	77·92
4	2 31 2·10	19 18 25·6	77·10
5	2 33 3·05	19 26 8·2	76·28
6	2 35 4·20	19 33 45·9	75·44
7	2 37 5·55	19 41 18·5	74·60
8	2 39 7·11	19 48 46·1	73·75
9	2 41 8·87	19 56 8·6	72·90
10	2 43 10·84	20 3 26·0	72·03
11	2 45 13·02	20 10 38·2	71·16
12	2 47 15·40	20 17 45·1	70·29
13	2 49 17·99	20 24 46·8	69·40
14	2 51 20·79	20 31 43·2	68·51
15	2 53 23·79	20 38 34·3	67·62
16	2 55 27·01	20 45 20·0	66·71
17	2 57 30·43	20 52 0·3	65·80
18	2 59 34·05	20 58 35·1	64·89
19	3 1 37·88	21 5 4·4	63·96
20	3 3 41·92	21 11 28·2	63·03
21	3 5 46·16	21 17 46·4	62·10
22	3 7 50·61	21 23 59·0	61·15
23	3 9 55·26	N.21 30 5·9	60·20
	SATURDAY 14.		
0	3 12 0·11	N.21 36 7·1	59·24
1	3 14 5·17	21 42 2·5	58·27
2	3 16 10·43	21 47 52·2	57·30
3	3 18 15·89	21 53 36·0	56·33
4	3 20 21·56	21 59 14·0	55·34
5	3 22 27·42	22 4 46·0	54·35
6	3 24 33·48	22 10 12·1	53·35
7	3 26 39·74	22 15 32·3	52·35
8	3 28 46·19	22 20 46·4	51·34
9	3 30 52·84	22 25 54·4	50·33
10	3 32 59·68	22 30 56·4	49·30
11	3 35 6·72	22 35 52·2	48·27
12	3 37 13·94	22 40 41·9	47·24
13	3 39 21·35	22 45 25·4	46·20
14	3 41 28·95	22 50 2·6	45·16
15	3 43 36·73	22 54 33·5	44·10
16	3 45 44·70	22 58 58·1	43·04
17	3 47 52·84	23 3 16·4	41·98
18	3 50 1·17	23 7 28·3	40·91
19	3 52 9·67	23 11 33·8	39·84
20	3 54 18·35	23 15 32·8	38·76
21	3 56 27·20	23 19 25·3	37·67
22	3 58 36·22	23 23 11·3	36·58
23	4 0 45·40	23 26 50·8	35·48
24	4 2 54·75	N.23 30 23·7	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SUNDAY 15.		
	h m s	° ′ ″	″
0	4 2 54·75	N.23 30 23·7	34·39
1	4 5 4·27	23 33 50·0	33·28
2	4 7 13·95	23 37 9·7	32·17
3	4 9 23·78	23 40 22·7	31·05
4	4 11 33·77	23 43 29·0	29·93
5	4 13 43·91	23 46 28·6	28·80
6	4 15 54·20	23 49 21·4	27·67
7	4 18 4·64	23 52 7·4	26·53
8	4 20 15·22	23 54 46·6	25·39
9	4 22 25·94	23 57 19·0	24·25
10	4 24 36·80	23 59 44·5	23·10
11	4 26 47·80	24 2 3·1	21·95
12	4 28 58·92	24 4 14·8	20·79
13	4 31 10·18	24 6 19·5	19·63
14	4 33 21·56	24 8 17·3	18·46
15	4 35 33·06	24 10 8·1	17·29
16	4 37 44·68	24 11 51·9	16·12
17	4 39 56·42	24 13 28·6	14·94
18	4 42 8·26	24 14 58·2	13·76
19	4 44 20·22	24 16 20·8	12·58
20	4 46 32·28	24 17 36·3	11·40
21	4 48 44·44	24 18 44·7	10·21
22	4 50 56·70	24 19 46·0	9·02
23	4 53 9·05	N.24 20 40·1	7·82
	MONDAY 16.		
0	4 55 21·49	N.24 21 27·0	6·63
1	4 57 34·02	24 22 6·8	5·43
2	4 59 46·63	24 22 39·4	4·23
3	5 1 59·32	24 23 4·7	3·02
4	5 4 12·08	24 23 22·9	1·82
5	5 6 24·92	24 23 33·8	0·61
6	5 8 37·82	24 23 37·5	0·60
7	5 10 50·79	24 23 33·9	1·81
8	5 13 3·82	24 23 23·0	3·02
9	5 15 16·90	24 23 4·9	4·23
10	5 17 30·04	24 22 39·5	5·45
11	5 19 43·22	24 22 6·8	6·66
12	5 21 56·45	24 21 26·8	7·88
13	5 24 9·72	24 20 39·5	9·10
14	5 26 23·02	24 19 44·9	10·32
15	5 28 36·36	24 18 43·0	11·54
16	5 30 49·72	24 17 33·8	12·76
17	5 33 3·11	24 16 17·2	13·98
18	5 35 16·52	24 14 53·4	15·20
19	5 37 29·95	24 13 22·2	16·42
20	5 39 43·39	24 11 43·7	17·63
21	5 41 56·84	24 9 57·9	18·85
22	5 44 10·30	24 8 4·7	20·07
23	5 46 23·75	24 6 4·3	21·29
24	5 48 37·21	N.24 3 56·6	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 17.				*THURSDAY* 19.		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	5 48 37·21	N.24 3 56·6	22·51	0	7 34 13·05	N.20 3 4·9	77·43
1	5 50 50·66	24 1 41·5	23·73	1	7 36 22·49	19 55 20·3	78·45
2	5 53 4·09	23 59 19·1	24·95	2	7 38 31·79	19 47 29·6	79·47
3	5 55 17·51	23 56 49·4	26·16	3	7 40 40·95	19 39 32·8	80·48
4	5 57 30·92	23 54 12·5	27·38	4	7 42 49·97	19 31 29·9	81·48
5	5 59 44·30	23 51 28·2	28·59	5	7 44 58·86	19 23 21·1	82·47
6	6 1 57·66	23 48 36·7	29·80	6	7 47 7·61	19 15 6·3	83·46
7	6 4 10·98	23 45 37·9	31·00	7	7 49 16·22	19 6 45·5	84·44
8	6 6 24·28	23 42 31·9	32·21	8	7 51 24·69	18 58 18·8	85·41
9	6 8 37·54	23 39 18·6	33·42	9	7 53 33·02	18 49 46·3	86·38
10	6 10 50·76	23 35 58·1	34·62	10	7 55 41·21	18 41 8·0	87·34
11	6 13 3·93	23 32 30·4	35·82	11	7 57 49·26	18 32 24·0	88·29
12	6 15 17·05	23 28 55·5	37·01	12	7 59 57·17	18 23 34·2	89·24
13	6 17 30·13	23 25 13·4	38·21	13	8 2 4·94	18 14 38·8	90·17
14	6 19 43·15	23 21 24·2	39·40	14	8 4 12·57	18 5 37·7	91·11
15	6 21 56·11	23 17 27·8	40·59	15	8 6 20·06	17 56 31·1	92·03
16	6 24 9·01	23 13 24·2	41·78	16	8 8 27·40	17 47 18·9	92·94
17	6 26 21·85	23 9 13·6	42·97	17	8 10 34·60	17 38 1·2	93·85
18	6 28 34·62	23 4 55·8	44·14	18	8 12 41·67	17 28 38·1	94·75
19	6 30 47·32	23 0 31·0	45·31	19	8 14 48·60	17 19 9·6	95·64
20	6 32 59·95	22 55 59·1	46·49	20	8 16 55·38	17 9 35·8	96·53
21	6 35 12·51	22 51 20·2	47·66	21	8 19 2·03	16 59 56·6	97·40
22	6 37 24·98	22 46 34·2	48·82	22	8 21 8·54	16 50 12·2	98·27
23	6 39 37·36	N.22 41 41·2	49·99	23	8 23 14·91	N.16 40 22·6	99·13
	WEDNESDAY 18.				*FRIDAY* 20.		
0	6 41 49·66	N.22 36 41·3	51·14	0	8 25 21·14	N.16 30 27·8	99·98
1	6 44 1·88	22 31 34·4	52·30	1	8 27 27·24	16 20 27·9	100·83
2	6 46 14·00	22 26 20·6	53·45	2	8 29 33·20	16 10 22·9	101·66
3	6 48 26·03	22 20 59·9	54·60	3	8 31 39·03	16 0 13·0	102·49
4	6 50 37·97	22 15 32·3	55·73	4	8 33 44·72	15 49 58·0	103·31
5	6 52 49·81	22 9 57·9	56·87	5	8 35 50·29	15 39 38·1	104·13
6	6 55 1·54	22 4 16·7	58·00	6	8 37 55·72	15 29 13·4	104·93
7	6 57 13·17	21 58 28·7	59·13	7	8 40 1·02	15 18 43·8	105·72
8	6 59 24·69	21 52 33·9	60·25	8	8 42 6·20	15 8 9·5	106·51
9	7 1 36·11	21 46 32·5	61·36	9	8 44 11·24	14 57 30·4	107·29
10	7 3 47·42	21 40 24·3	62·47	10	8 46 16·16	14 46 46·7	108·06
11	7 5 58·62	21 34 9·4	63·58	11	8 48 20·96	14 35 58·3	108·82
12	7 8 9·69	21 27 47·9	64·68	12	8 50 25·63	14 25 5·3	109·58
13	7 10 20·65	21 21 19·8	65·78	13	8 52 30·19	14 14 7·8	110·32
14	7 12 31·50	21 14 45·2	66·87	14	8 54 34·62	14 3 5·9	111·06
15	7 14 42·22	21 8 4·0	67·95	15	8 56 38·94	13 51 59·5	111·79
16	7 16 52·82	21 1 16·3	69·03	16	8 58 43·15	13 40 48·8	112·51
17	7 19 3·30	20 54 22·1	70·10	17	9 0 47·24	13 29 33·7	113·22
18	7 21 13·65	20 47 21·5	71·16	18	9 2 51·22	13 18 14·4	113·92
19	7 23 23·87	20 40 14·5	72·22	19	9 4 55·09	13 6 50·9	114·62
20	7 25 33·97	20 33 1·1	73·28	20	9 6 58·85	12 55 23·2	115·30
21	7 27 43·94	20 25 41·5	74·33	21	9 9 2·51	12 43 51·3	115·98
22	7 29 53·78	20 18 15·5	75·37	22	9 11 6·06	12 32 15·4	116·65
23	7 32 3·48	20 10 43·3	76·40	23	9 13 9·51	12 20 35·6	117·31
24	7 34 13·05	N.20 3 4·9		24	9 15 12·87	N.12 8 51·8	

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Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.	Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SATURDAY 21.				*MONDAY 23.*		
	h m s	° ′ ″	″		h m s	° ′ ″	″
0	9 15 12·87	N. 12 8 51·8	117·95	0	10 52 56·28	N. 1 45 57·4	138·39
1	9 17 16·13	11 57 4·1	118·60	1	10 54 58·66	1 32 7·0	138·58
2	9 19 19·30	11 45 12·5	119·23	2	10 57 1·12	1 18 15·5	138·76
3	9 21 22·37	11 33 17·1	119·86	3	10 59 3·66	1 4 23·0	138·93
4	9 23 25·36	11 21 18·0	120·47	4	11 1 6·28	0 50 29·4	139·09
5	9 25 28·26	11 9 15·2	121·08	5	11 3 8·98	0 36 34·9	139·23
6	9 27 31·08	10 57 8·7	121·68	6	11 5 11·78	0 22 39·5	139·37
7	9 29 33·81	10 44 58·6	122·27	7	11 7 14·68	N. 0 8 43·3	139·49
8	9 31 36·47	10 32 45·0	122·84	8	11 9 17·68	S. 0 5 13·7	139·61
9	9 33 39·06	10 20 27·9	123·42	9	11 11 20·78	0 19 11·3	139·71
10	9 35 41·57	10 8 7·4	123·98	10	11 13 23·99	0 33 9·5	139·80
11	9 37 44·01	9 55 43·6	124·53	11	11 15 27·32	0 47 8·3	139·88
12	9 39 46·38	9 43 16·4	125·08	12	11 17 30·77	1 1 7·6	139·95
13	9 41 48·69	9 30 45·9	125·61	13	11 19 34·34	1 15 7·3	140·01
14	9 43 50·94	9 18 12·3	126·14	14	11 21 38·04	1 29 7·4	140·05
15	9 45 53·14	9 5 35·4	126·66	15	11 23 41·87	1 43 7·7	140·09
16	9 47 55·28	8 52 55·5	127·16	16	11 25 45·83	1 57 8·2	140·12
17	9 49 57·37	8 40 12·5	127·66	17	11 27 49·94	2 11 8·9	140·13
18	9 51 59·42	8 27 26·6	128·15	18	11 29 54·19	2 25 9·7	140·13
19	9 54 1·42	8 14 37·7	128·63	19	11 31 58·60	2 39 10·5	140·12
20	9 56 3·37	8 1 45·9	129·10	20	11 34 3·16	2 53 11·2	140·10
21	9 58 5·29	7 48 51·2	129·56	21	11 36 7·87	3 7 11·8	140·07
22	10 0 7·18	7 35 53·8	130·01	22	11 38 12·76	3 21 12·2	140·03
23	10 2 9·04	N. 7 22 53·7	130·46	23	11 40 17·81	S. 3 35 12·4	139·97
	SUNDAY 22.				*TUESDAY 24.*		
0	10 4 10·86	N. 7 9 51·0	130·89	0	11 42 23·03	S. 3 49 12·2	139·90
1	10 6 12·66	6 56 45·7	131·31	1	11 44 28·43	4 3 11·6	139·82
2	10 8 14·45	6 43 37·8	131·73	2	11 46 34·02	4 17 10·6	139·74
3	10 10 16·22	6 30 27·4	132·13	3	11 48 39·79	4 31 9·0	139·63
4	10 12 17·97	6 17 14·6	132·53	4	11 50 45·75	4 45 6·8	139·51
5	10 14 19·72	6 3 59·5	132·91	5	11 52 51·91	4 59 3·9	139·38
6	10 16 21·46	5 50 42·0	133·29	6	11 54 58·27	5 13 0·2	139·24
7	10 18 23·20	5 37 22·2	133·66	7	11 57 4·83	5 26 55·7	139·09
8	10 20 24·94	5 24 0·3	134·01	8	11 59 11·60	5 40 50·2	138·92
9	10 22 26·69	5 10 36·2	134·36	9	12 1 18·58	5 54 43·7	138·74
10	10 24 28·44	4 57 10·0	134·70	10	12 3 25·78	6 8 36·2	138·55
11	10 26 30·21	4 43 41·8	135·03	11	12 5 33·21	6 22 27·5	138·34
12	10 28 32·00	4 30 11·7	135·35	12	12 7 40·86	6 36 17·6	138·13
13	10 30 33·81	4 16 39·6	135·66	13	12 9 48·74	6 50 6·4	137·90
14	10 32 35·65	4 3 5·7	135·96	14	12 11 56·86	7 3 53·8	137·66
15	10 34 37·51	3 49 30·0	136·24	15	12 14 5·22	7 17 39·7	137·40
16	10 36 39·41	3 35 52·5	136·52	16	12 16 13·83	7 31 24·1	137·13
17	10 38 41·34	3 22 13·3	136·80	17	12 18 22·68	7 45 6·9	136·84
18	10 40 43·32	3 8 32·5	137·05	18	12 20 31·78	7 58 47·9	136·55
19	10 42 45·34	2 54 50·2	137·30	19	12 22 41·14	8 12 27·2	136·23
20	10 44 47·41	2 41 6·4	137·54	20	12 24 50·77	8 26 4·6	135·91
21	10 46 49·54	2 27 21·1	137·77	21	12 27 0·66	8 39 40·1	135·57
22	10 48 51·73	2 13 34·5	137·99	22	12 29 10·82	8 53 13·5	135·21
23	10 50 53·97	1 59 46·6	138·20	23	12 31 21·26	9 6 44·8	134·85
24	10 52 56·28	N. 1 45 57·4		24	12 33 31·97	S. 9 20 13·9	

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THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	WEDNESDAY 25.		
	h m s	° ′ ″	″
0	12 33 31·97	S. 9 20 13·9	134·47
1	12 35 42·97	9 33 40·7	134·08
2	12 37 54·25	9 47 5·2	133·67
3	12 40 5·83	10 0 27·3	133·25
4	12 42 17·70	10 13 46·8	132·81
5	12 44 29·87	10 27 3·7	132·35
6	12 46 42·34	10 40 17·8	131·88
7	12 48 55·12	10 53 29·1	131·40
8	12 51 8·21	11 6 37·5	130·90
9	12 53 21·61	11 19 42·9	130·39
10	12 55 35·33	11 32 45·3	129·86
11	12 57 49·38	11 45 44·5	129·32
12	13 0 3·75	11 58 40·4	128·76
13	13 2 18·45	12 11 33·0	128·19
14	13 4 33·48	12 24 22·2	127·60
15	13 6 48·85	12 37 7·8	127·00
16	13 9 4·55	12 49 49·8	126·38
17	13 11 20·60	13 2 28·1	125·74
18	13 13 37·00	13 15 2·5	125·09
19	13 15 53·74	13 27 33·0	124·42
20	13 18 10·83	13 39 59·5	123·73
21	13 20 28·28	13 52 21·9	123·03
22	13 22 46·08	14 4 40·1	122·31
23	13 25 4·25	S. 14 16 53·9	121·58
	THURSDAY 26.		
0	13 27 22·78	S. 14 29 3·4	120·83
1	13 29 41·67	14 41 8·4	120·07
2	13 32 0·93	14 53 8·8	119·29
3	13 34 20·56	15 5 4·6	118·49
4	13 36 40·56	15 16 55·5	117·67
5	13 39 0·93	15 28 41·5	116·84
6	13 41 21·68	15 40 22·6	115·99
7	13 43 42·81	15 51 58·5	115·12
8	13 46 4·32	16 3 29·2	114·24
9	13 48 26·20	16 14 54·7	113·34
10	13 50 48·47	16 26 14·8	112·43
11	13 53 11·13	16 37 29·4	111·50
12	13 55 34·16	16 48 38·3	110·55
13	13 57 57·58	16 59 41·6	109·58
14	14 0 21·40	17 10 39·1	108·60
15	14 2 45·60	17 21 30·7	107·60
16	14 5 10·19	17 32 16·3	106·58
17	14 7 35·16	17 42 55·8	105·54
18	14 10 0·53	17 53 29·1	104·49
19	14 12 26·29	18 3 56·0	103·42
20	14 14 52·43	18 14 16·5	102·33
21	14 17 18·97	18 24 30·5	101·23
22	14 19 45·89	18 34 37·8	100·11
23	14 22 13·21	18 44 38·5	98·97
24	14 24 40·91	S. 18 54 32·3	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	FRIDAY 27.		
	h m s	° ′ ″	″
0	14 24 40·91	S. 18 54 32·3	97·82
1	14 27 9·00	19 4 19·2	96·65
2	14 29 37·47	19 13 59·1	95·46
3	14 32 6·33	19 23 31·8	94·25
4	14 34 35·58	19 32 57·3	93·03
5	14 37 5·20	19 42 15·5	91·79
6	14 39 35·21	19 51 26·3	90·53
7	14 42 5·60	20 0 29·5	89·26
8	14 44 36·36	20 9 25·0	87·97
9	14 47 7·49	20 18 12·9	86·67
10	14 49 38·99	20 26 52·9	85·34
11	14 52 10·86	20 35 24·9	84·01
12	14 54 43·10	20 43 49·0	82·66
13	14 57 15·70	20 52 5·0	81·29
14	14 59 48·66	21 0 12·8	79·91
15	15 2 21·98	21 8 12·2	78·51
16	15 4 55·65	21 16 3·3	77·10
17	15 7 29·66	21 23 45·9	75·66
18	15 10 4·02	21 31 19·9	74·22
19	15 12 38·72	21 38 45·2	72·76
20	15 15 13·76	21 46 1·7	71·28
21	15 17 49·13	21 53 9·4	69·80
22	15 20 24·82	22 0 8·2	68·29
23	15 23 0·83	S. 22 6 57·9	66·77
	SATURDAY 28.		
0	15 25 37·15	S. 22 13 38·6	65·23
1	15 28 13·79	22 20 10·0	63·69
2	15 30 50·73	22 26 32·2	62·13
3	15 33 27·97	22 32 45·0	60·56
4	15 36 5·50	22 38 48·3	58·97
5	15 38 43·32	22 44 42·1	57·37
6	15 41 21·41	22 50 26·4	55·77
7	15 43 59·77	22 56 1·0	54·15
8	15 46 38·40	23 1 25·9	52·51
9	15 49 17·29	23 6 41·0	50·87
10	15 51 56·43	23 11 46·2	49·21
11	15 54 35·81	23 16 41·5	47·55
12	15 57 15·43	23 21 26·8	45·87
13	15 59 55·28	23 26 2·0	44·19
14	16 2 35·35	23 30 27·2	42·49
15	16 5 15·63	23 34 42·1	40·78
16	16 7 56·11	23 38 46·8	39·07
17	16 10 36·78	23 42 41·2	37·35
18	16 13 17·64	23 46 25·3	35·62
19	16 15 58·68	23 49 59·0	33·88
20	16 18 39·89	23 53 22·3	32·13
21	16 21 21·26	23 56 35·1	30·38
22	16 24 2·78	23 59 37·4	28·62
23	16 26 44·44	24 2 29·1	26·85
24	16 29 26·23	S. 24 5 10·2	

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MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	SUNDAY 29.		
	h m s	° ′ ″	″
0	16 29 26·23	S. 24 5 10·2	25·08
1	16 32 8·15	24 7 40·7	23·30
2	16 34 50·18	24 10 0·5	21·52
3	16 37 32·31	24 12 9·6	19·73
4	16 40 14·53	24 14 8·0	17·94
5	16 42 56·84	24 15 55·6	16·15
6	16 45 39·22	24 17 32·5	14·35
7	16 48 21·66	24 18 58·6	12·54
8	16 51 4·15	24 20 13·9	10·74
9	16 53 46·69	24 21 18·3	8·94
10	16 56 29·26	24 22 12·0	7·13
11	16 59 11·85	24 22 54·8	5·33
12	17 1 54·45	24 23 26·7	3·51
13	17 4 37·05	24 23 47·8	1·71
14	17 7 19·65	24 23 58·0	0·10
15	17 10 2·23	24 23 57·4	1·90
16	17 12 44·78	24 23 46·0	3·71
17	17 15 27·29	24 23 23·8	5·51
18	17 18 9·75	24 22 50·7	7·31
19	17 20 52·15	24 22 6·8	9·11
20	17 23 34·48	24 21 12·1	10·91
21	17 26 16·72	24 20 6·6	12·70
22	17 28 58·88	24 18 50·4	14·49
23	17 31 40·94	S. 24 17 23·5	16·27
	MONDAY 30.		
0	17 34 22·88	S. 24 15 45·8	18·05
1	17 37 4·70	24 13 57·5	19·83
2	17 39 46·40	24 11 58·5	21·60
3	17 42 27·95	24 9 48·9	23·36
4	17 45 9·35	24 7 28·8	25·11
5	17 47 50·59	24 4 58·1	26·86
6	17 50 31·66	24 2 16·9	28·60
7	17 53 12·55	23 59 25·3	30·34
8	17 55 53·26	23 56 23·2	32·06
9	17 58 33·77	23 53 10·9	33·78
10	18 1 14·07	23 49 48·2	35·48
11	18 3 54·16	23 46 15·3	37·18
12	18 6 34·02	23 42 32·2	38·88
13	18 9 13·65	23 38 39·0	40·56
14	18 11 53·03	23 34 35·6	42·23
15	18 14 32·16	23 30 22·3	43·88
16	18 17 11·03	23 25 59·0	45·53
17	18 19 49·64	23 21 25·8	47·16
18	18 22 27·97	23 16 42·8	48·78
19	18 25 6·02	23 11 50·1	50·39
20	18 27 43·79	23 6 47·7	51·99
21	18 30 21·25	23 1 35·8	53·58
22	18 32 58·41	22 56 14·3	55·15
23	18 35 35·26	22 50 43·4	56·72
24	18 38 11·80	S. 22 45 3·0	

Hour.	Right Ascension.	Declination.	Diff. Dec. for 10m.
	TUESDAY 31.		
	h m s	° ′ ″	″
0	18 38 11·80	S. 22 45 3·0	58·26
1	18 40 48·01	22 39 13·4	59·79
2	18 43 23·88	22 33 14·7	61·31
3	18 45 59·42	22 27 6·8	62·82
4	18 48 34·61	22 20 49·9	64·31
5	18 51 9·46	22 14 24·0	65·78
6	18 53 43·95	22 7 49·3	67·24
7	18 56 18·08	22 1 5·9	68·68
8	18 58 51·85	21 54 13·8	70·11
9	19 1 25·25	21 47 13·1	71·52
10	19 3 58·27	21 40 4·0	72·92
11	19 6 30·91	21 32 46·5	74·30
12	19 9 3·17	21 25 20·6	75·67
13	19 11 35·04	21 17 46·6	77·02
14	19 14 6·51	21 10 4·5	78·35
15	19 16 37·59	21 2 14·4	79·67
16	19 19 8·27	20 54 16·4	80·97
17	19 21 38·54	20 46 10·6	82·25
18	19 24 8·40	20 37 57·1	83·51
19	19 26 37·86	20 29 36·0	84·76
20	19 29 6·90	20 21 7·5	85·99
21	19 31 35·53	20 12 31·5	87·21
22	19 34 3·74	20 3 48·3	88·40
23	19 36 31·53	S. 19 54 57·8	89·58
	WED., JAN. 1, 1862.		
0	19 38 58·89	S. 19 46 0·3	

PHASES OF THE MOON.

	d	h	m
● New Moon - -	1	14	16·7
☽ *First Quarter* - -	8	15	9·5
○ Full Moon - - -	16	20	7·7
☾ *Last Quarter* - -	24	9	51·2
● New Moon - -	31	1	54·2

	d	h
☾ Apogee - - - - - -	13	2
☾ Perigee - - - - - -	29	1

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LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	*Noon.*	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
4	Sun W.	33 3 45	2561	34 43. 33	2580	36 22 56	2597	38 1 55	2616
	Fomalhaut E.	50 31 5	3067	49 2 15	3131	47 34 43	3200	46 8 34	3276
	α Pegasi E.	67 12 22	2398	65 28 44	2419	63 45 37	2442	62 3 2	2466
	α Arietis E.	109 47 53	2256	108 0 49	2273	106 14 10	2290	104 27 56	2307
5	Sun W.	46 10 24	2713	47 46 47	2733	49 22 43	2753	50 58 13	2773
	Fomalhaut E.	39 22 20	3775	38 6 52	3908	36 53 40	4056	35 42 56	4222
	α Pegasi E.	53 38 48	2597	51 59. 49	2626	50 21 30	2657	48 43 53	2689
	α Arietis E.	95 43 12	2398	93 59 35	2417	92 16 25	2436	90 33 41	2455
6	Sun W.	58 49 1	2876	60 21 51	2896	61 54 15	2916	63 26 14	2936
	α Pegasi E.	40 47 9	2876	39 14 20	2920	37 42 27	2969	36 11 35	3021
	α Arietis E.	82 6 47	2551	80 26 45	2570	78 47 9	2589	77 7 59	2608
	Aldebaran E.	114 52 34	2580	113 13 11	2597	111 34 12	2615	109 55 37	2632
7	Sun W.	70 59 50	3034	72 29 20	3052	73 58 28	3072	75 27 12	3090
	Venus W.	24 48 28	3138	26 15 51	3149	27 43 1	3160	29 9 58	3172
	α Arietis E.	68 58 32	2701	67 21 53	2719	65 45 39	2736	64 9 47	2754
	Aldebaran E.	101 48 41	2720	100 12 27	2737	98 36 37	2753	97 1 8	2771
8	Sun W.	82 45 29	3177	84 12 6	3193	85 38 24	3208	87 4 24	3224
	α Aquilæ W.	44 33 16	3949	45 45 46	3905	46 59 1	3865	48 12 56	3830
	Venus W.	36 20 54	3238	37 46 18	3252	39 11 25	3265	40 36 18	3279
	α Arietis E.	56 16 11	2838	54 42 33	2855	53 9 16	2870	51 36 19	2886
	Aldebaran E.	89 9 7	2850	87 35 43	2865	86 2 39	2880	84 29 55	2894
9	Sun W.	94 10 0	3294	95 34 19	3306	96 58 23	3318	98 22 14	3331
	α Aquilæ W.	54 30 17	3708	55 46 56	3691	57 3 53	3677	58 21 5	3663
	Venus W.	47 36 54	3340	49 0 20	3352	50 23 32	3363	51 46 31	3373
	α Arietis E.	43 56 25	2959	42 25 21	2974	40 54 36	2988	39 24 8	3002
	Aldebaran E.	76 50 35	2961	75 19 33	2973	73 48 46	2985	72 18 14	2996
10	Sun W.	105 18 12	3381	106 40 50	3391	108 3 17	3399	109 25 35	3407
	α Aquilæ W.	64 50 8	3618	66 8 23	3611	67 26 45	3606	68 45 13	3601
	Venus W.	58 38 35	3420	60 0 29	3429	61 22 13	3436	62 43 49	3443
	Fomalhaut W.	40 57 19	4192	42 5 53	4132	43 15 24	4078	44 25 47	4029
	Aldebaran E.	64 49 1	3048	63 19 48	3058	61 50 47	3067	60 21 57	3076
	Pollux E.	106 37 46	3047	105 8 31	3054	103 39 25	3061	102 10 27	3068
11	Sun W.	116 15 2	3439	117 36 34	3444	118 58. 1	3448	120 19 23	3453
	α Aquilæ W.	75 18 38	3585	76 37 29	3583	77 56 22	3582	79 15 16	3580
	Venus W.	69 29 57	3472	70 50 52	3477	72 11 42	3481	73 32 27	3485
	Fomalhaut W.	50 28 19	3847	51 42 33	3819	52 57 15	3793	54 12 24	3771
	Aldebaran E.	53 0 23	3116	51 32 33	3123	50 4 51	3131	48 37 19	3138
	Pollux E.	94 47 34	3096	93 19 19	3100	91 51 9	3105	90 23 5	3108
12	Sun W.	127 5 13	3467	128 26 14	3468	129 47 14	3470	131 8 12	3470
	α Aquilæ W.	85 50 4	3577	87 9 4	3577	88 28 3	3578	89 47 1	3578
	Venus W.	80 15 21	3497	81 35 49	3498	82 56 16	3499	84 16 41	3499
	Fomalhaut W.	60 33 36	3678	61 50 46	3663	63 8 13	3649	64 25 55	3636
	α Pegasi W.	38 8 31	3441	39 30 1	3420	40 51 55	3402	42 14 9	3384
	Aldebaran E.	41 21 43	3173	39 55 1	3180	38 28 28	3188	37 2 5	3197
	Pollux E.	83 3 42	3121	81 35 58	3123	80 8 17	3124	78 40 37	3126

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Day of the Month.	Star's Name and Position.	*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
4	Sun W.	39 40 28	2635	41 18 36	2654	42 56 18	2673	44 33 34	2693
	Fomalhaut E.	44 43 54	3358	43 20 50	3448	41 59 27	3547	40 39 55	3655
	α Pegasi E.	60 21 1	2490	58 39 34	2515	56 58 42	2541	55 18 26	2569
	α Arietis E.	102 42 7	2325	100 56 44	2343	99 11 47	2361	97 27 16	2380
5	Sun W.	52 33 16	2794	54 7 52	2814	55 42 1	2835	57 15 44	2855
	Fomalhaut E.	34 34 51	4407	33 29 36	4617	32 27 26	4855	31 28 35	5127
	α Pegasi E.	47 6 58	2723	45 30 49	2758	43 55 26	2795	42 20 52	2835
	α Arietis E.	88 51 25	2474	87 9 35	2493	85 28 12	2513	83 47 17	2531
6	Sun W.	64 57 47	2957	66 28 54	2976	67 59 37	2996	69 29 55	3014
	α Pegasi E.	34 41 48	3077	33 13 10	3138	31 45 46	3206	30 19 44	3281
	α Arietis E.	75 29 15	2627	73 50 56	2646	72 13 3	2664	70 35 35	2683
	Aldebaran E.	108 17 26	2650	106 39 39	2668	105 2 16	2686	103 25 17	2703
7	Sun W.	76 55 34	3107	78 23 35	3126	79 51 13	3143	81 18 31	3159
	Venus W.	30 36 40	3185	32 3 7	3198	33 29 19	3212	34 55 14	3225
	α Arietis E.	62 34 19	2772	60 59 14	2789	59 24 31	2805	57 50 10	2822
	Aldebaran E.	95 26 2	2787	93 51 17	2803	92 16 53	2818	90 42 49	2835
8	Sun W.	88 30 5	3238	89 55 29	3253	91 20 36	3267	92 45 26	3281
	α Aquilæ W.	49 27 27	3799	50 42 30	3772	51 58 1	3747	53 13 58	3726
	Venus W.	42 0 54	3291	43 25 16	3304	44 49 23	3316	46 13 16	3329
	α Arietis E.	50 3 42	2901	48 31 24	2916	46 59 26	2931	45 27 46	2946
	Aldebaran E.	82 57 28	2908	81 25 19	2922	79 53 28	2935	78 21 53	2948
9	Sun W.	99 45 50	3341	101 9 14	3352	102 32 25	3363	103 55 24	3372
	α Aquilæ W.	59 38 32	3652	60 56 10	3641	62 14 0	3632	63 32 0	3624
	Venus W.	53 9 18	3383	54 31 54	3393	55 54 18	3402	57 16 32	3412
	α Arietis E.	37 53 58	3016	36 24 5	3030	34 54 29	3044	33 25 11	3058
	Aldebaran E.	70 47 56	3008	69 17 53	3018	67 48 3	3028	66 18 25	3039
10	Sun W.	110 47 44	3414	112 9 45	3421	113 31 38	3428	114 53 23	3433
	α Aquilæ W.	70 3 46	3597	71 22 24	3593	72 41 6	3590	73 59 51	3588
	Venus W.	64 5 17	3450	65 26 37	3456	66 47 50	3462	68 8 57	3468
	Fomalhaut W.	45 36 58	3985	46 48 52	3945	48 1 26	3910	49 14 36	3877
	Aldebaran E.	58 53 18	3085	57 24 50	3092	55 56 31	3101	54 28 22	3109
	Pollux E.	100 41 38	3074	99 12 57	3080	97 44 23	3085	96 15 55	3091
11	Sun W.	121 40 40	3456	123 1 54	3460	124 23 3	3462	125 44 9	3464
	α Aquilæ W.	80 34 12	3579	81 53 9	3578	83 12 7	3577	84 31 6	3578
	Venus W.	74 53 8	3488	76 13 46	3491	77 34 20	3493	78 54 52	3496
	Fomalhaut W.	55 27 56	3750	56 43 51	3729	58 0 7	3711	59 16 42	3694
	Aldebaran E.	47 9 55	3144	45 42 39	3152	44 15 32	3158	42 48 33	3166
	Pollux E.	88 55 5	3111	87 27 9	3114	85 59 17	3117	84 31 28	3119
12	Sun W.	132 29 10	3471	133 50 7	3471	135 11 4	3470	136 32 2	3470
	α Aquilæ W.	91 5 59	3579	92 24 56	3580	93 43 52	3581	95 2 47	3583
	Venus W.	85 37 6	3499	86 57 31	3499	88 17 56	3498	89 38 22	3497
	Fomalhaut W.	65 43 51	3623	67 2 0	3611	68 20 22	3600	69 38 56	3589
	α Pegasi W.	43 36 44	3369	44 59 36	3354	46 22 45	3340	47 46 10	3328
	Aldebaran E.	35 35 52	3206	34 9 50	3216	32 44 0	3227	31 18 22	3239
	Pollux E.	77 12 59	3127	75 45 22	3128	74 17 46	3128	72 50 10	3128

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Day of the Month.	Star's Name and Position.		*Noon.*	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
			° ′ ″		° ′ ″		° ′ ″		° ′ ″	
13	Venus	W.	90 58 49	3496	92 19 18	3495	93 39 48	3492	95 0 21	3490
	Fomalhaut	W.	70 57 42	3579	72 16 39	3570	73 35 46	3562	74 55 2	3552
	α Pegasi	W.	49 9 49	3316	50 33 42	3304	51 57 49	3294	53 22 7	3284
	Pollux	E.	71 22 34	3128	69 54 58	3128	68 27 22	3126	66 59 44	3126
	Regulus	E.	108 13 43	3093	106 45 25	3092	105 17 6	3091	103 48 45	3088
14	Venus	W.	101 43 48	3475	103 4 40	3471	104 25 37	3467	105 46 38	3462
	Fomalhaut	W.	81 33 40	3515	82 53 48	3509	84 14 2	3502	85 34 24	3497
	α Pegasi	W.	60 26 29	3238	61 51 53	3230	63 17 27	3221	64 43 11	3214
	Pollux	E.	59 41 21	3120	58 13 36	3119	56 45 49	3117	55 18 0	3115
	Regulus	E.	96 26 13	3074	94 57 32	3070	93 28 46	3067	91 59 56	3063
15	α Pegasi	W.	71 54 9	3176	73 20 47	3168	74 47 35	3161	76 14 31	3153
	α Arietis	W.	28 20 12	3109	29 48 10	3098	31 16 22	3086	32 44 49	3076
	Pollux	E.	47 58 29	3109	46 30 30	3108	45 2 30	3108	43 34 30	3107
	Regulus	E.	84 34 27	3040	83 5 4	3035	81 35 35	3031	80 6 0	3026
	Saturn	E.	108 56 45	3075	107 28 5	3069	105 59 18	3063	104 30 23	3058
	Jupiter	E.	112 51 14	3087	111 22 49	3082	109 54 18	3076	108 25 39	3070
16	α Pegasi	W.	83 31 22	3118	84 59 10	3112	86 27 5	3105	87 55 9	3099
	α Arietis	W.	40 10 11	3027	41 39 50	3018	43 9 40	3010	44 39 40	3001
	Pollux	E.	36 14 38	3116	34 46 48	3120	33 19 3	3126	31 51 25	3134
	Regulus	E.	72 36 24	2998	71 6 8	2992	69 35 45	2985	68 5 14	2980
	Saturn	E.	97 4 0	3026	95 34 20	3021	94 4 33	3014	92 34 37	3007
	Jupiter	E.	101 0 32	3039	99 31 7	3032	98 1 34	3026	96 31 53	3019
17	α Pegasi	W.	95 17 27	3067	96 46 17	3061	98 15 15	3055	99 44 20	3049
	α Arietis	W.	52 12 21	2961	53 43 23	2952	55 14 36	2944	56 45 59	2936
	Regulus	E.	60 30 46	2949	58 59 29	2943	57 28 5	2936	55 56 32	2931
	Saturn	E.	85 2 56	2974	83 32 11	2967	82 1 17	2961	80 30 15	2954
	Jupiter	E.	89 1 22	2985	87 30 50	2978	86 0 10	2970	84 29 20	2964
18	α Arietis	W.	64 25 24	2896	65 57 48	2889	67 30 21	2880	69 3 5	2873
	Aldebaran	W.	32 6 35	3013	33 36 31	2995	35 6 50	2978	36 37 30	2962
	Regulus	E.	48 16 54	2900	46 44 35	2894	45 12 8	2888	43 39 34	2883
	Saturn	E.	72 52 58	2920	71 21 5	2913	69 49 3	2907	68 16 53	2900
	Jupiter	E.	76 53 2	2929	75 21 20	2921	73 49 28	2915	72 17 28	2908
	Spica	E.	102 14 45	2879	100 41 59	2872	99 9 4	2864	97 35 59	2856
19	α Arietis	W.	76 49 16	2833	78 23 1	2825	79 56 56	2817	81 31 2	2808
	Aldebaran	W.	44 15 32	2894	45 47 58	2882	47 20 40	2870	48 53 37	2859
	Regulus	E.	35 54 59	2858	34 21 46	2853	32 48 27	2849	31 15 3	2847
	Saturn	E.	60 33 55	2868	59 0 55	2861	57 27 46	2855	55 54 30	2849
	Jupiter	E.	64 35 11	2872	63 2 16	2866	61 29 13	2858	59 56 0	2852
	Spica	E.	89 48 8	2818	88 14 4	2810	86 39 49	2803	85 5 25	2795
	Mars	E.	116 3 13	3065	114 34 21	3056	113 5 18	3047	111 36 4	3038
20	α Arietis	W.	89 24 12	2767	90 59 23	2759	92 34 44	2750	94 10 17	2742
	Aldebaran	W.	56 41 57	2805	58 16 18	2795	59 50 53	2785	61 25 41	2774
	Pollux	W.	16 16 34	3341	17 39 58	3237	19 5 23	3154	20 32 27	3087
	Saturn	E.	48 6 11	2821	46 32 10	2815	44 58 2	2811	43 23 49	2806
	Jupiter	E.	52 7 46	2818	50 33 41	2811	48 59 28	2805	47 25 6	2799
	Spica	E.	77 10 46	2754	75 35 18	2746	73 59 39	2738	72 23 49	2729

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Day of the Month.	Star's Name and Position.	*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
13	Venus W.	96 20 56	3488	97 41 34	3485	99 2 15	3481	100 23 0	3479
	Fomalhaut W.	76 14 29	3544	77 34 4	3536	78 53 48	3529	80 13 40	3522
	α Pegasi W.	54 46 37	3274	56 11 19	3265	57 36 12	3256	59 1 15	3247
	Pollux E.	65 32 6	3125	64 4 27	3124	62 36 47	3123	61 9 5	3121
	Regulus E.	102 20 21	3086	100 51 54	3083	99 23 24	3080	97 54 50	3078
14	Venus W.	107 7 44	3458	108 28 55	3453	109 50 12	3448	111 11 34	3444
	Fomalhaut W.	86 54 51	3491	88 15 25	3487	89 36 4	3482	90 56 49	3478
	α Pegasi W.	66 9 4	3206	67 35 6	3198	69 1 18	3190	70 27 39	3183
	Pollux E.	53 50 9	3114	52 22 17	3112	50 54 22	3111	49 26 26	3110
	Regulus E.	90 31 1	3058	89 2 0	3055	87 32 55	3050	86 3 44	3045
15	α Pegasi W.	77 41 36	3146	79 8 50	3139	80 36 12	3132	82 3 43	3125
	α Arietis W.	34 13 28	3065	35 42 21	3055	37 11 26	3045	38 40 43	3036
	Pollux E.	42 6 29	3108	40 38 29	3108	39 10 29	3110	37 42 32	3113
	Regulus E.	78 36 19	3019	77 6 30	3014	75 36 35	3009	74 6 33	3003
	Saturn E.	103 1 22	3052	101 32 13	3045	100 2 56	3039	98 33 32	3033
	Jupiter E.	106 56 53	3064	105 27 59	3058	103 58 58	3052	102 29 49	3045
16	α Pegasi W.	89 23 20	3092	90 51 40	3085	92 20 8	3078	93 48 44	3073
	α Arietis W.	46 9 52	2993	47 40 13	2984	49 10 46	2977	50 41 28	2968
	Pollux E.	30 23 57	3144	28 56 40	3157	27 29 39	3172	26 2 56	3192
	Regulus E.	66 34 36	2974	65 3 50	2968	63 32 57	2961	62 1 55	2955
	Saturn E.	91 4 33	3001	89 34 21	2994	88 4 1	2988	86 33 33	2981
	Jupiter E.	95 2 4	3012	93 32 6	3005	92 2 0	2998	90 31 45	2992
17	α Pegasi W.	101 13 32	3044	102 42 50	3038	104 12 16	3033	105 41 48	3028
	α Arietis W.	58 17 32	2928	59 49 15	2920	61 21 8	2913	62 53 11	2905
	Regulus E.	54 24 52	2924	52 53 4	2918	51 21 8	2912	49 49 5	2906
	Saturn E.	78 59 5	2947	77 27 46	2940	75 56 18	2934	74 24 42	2927
	Jupiter E.	82 58 22	2957	81 27 16	2950	79 56 0	2943	78 24 36	2935
18	α Arietis W.	70 35 58	2865	72 9 2	2857	73 42 16	2849	75 15 41	2841
	Aldebaran W.	38 8 31	2947	39 39 50	2933	41 11 27	2920	42 43 21	2906
	Regulus E.	42 6 53	2877	40 34 5	2871	39 1 9	2866	37 28 7	2862
	Saturn E.	66 44 34	2894	65 12 7	2887	63 39 32	2880	62 6 48	2873
	Jupiter E.	70 45 19	2900	69 13 0	2894	67 40 33	2886	66 7 56	2880
	Spica E.	96 2 44	2849	94 29 20	2841	92 55 46	2834	91 22 2	2826
19	α Arietis W.	83 5 19	2801	84 39 46	2792	86 14 24	2784	87 49 13	2776
	Aldebaran W.	50 26 49	2848	52 0 15	2837	53 33 55	2826	55 7 49	2815
	Regulus E.	29 41 36	2845	28 8 6	2843	26 34 34	2844	25 1 3	2845
	Saturn E.	54 21 5	2843	52 47 33	2837	51 13 53	2831	49 40 5	2826
	Jupiter E.	58 22 39	2845	56 49 9	2838	55 15 30	2831	53 41 42	2824
	Spica E.	83 30 51	2786	81 56 5	2779	80 21 10	2770	78 46 3	2763
	Mars E.	110 6 39	3030	108 37 3	3022	107 7 17	3012	105 37 19	3003
20	α Arietis W.	95 46 1	2733	97 21 57	2725	98 58 3	2716	100 34 22	2707
	Aldebaran W.	63 0 43	2764	64 35 58	2754	66 11 26	2744	67 47 7	2734
	Pollux W.	22 0 53	3031	23 30 27	2984	25 1 0	2943	26 32 25	2908
	Saturn E.	41 49 29	2803	40 15 5	2799	38 40 36	2797	37 6 5	2795
	Jupiter E.	45 50 37	2793	44 16 0	2788	42 41 16	2782	41 6 25	2777
	Spica E.	70 47 48	2720	69 11 35	2712	67 35 11	2704	65 58 36	2695

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LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	Noon.	P.L. of diff.	III^h.	P.L. of diff.	VI^h.	P.L. of diff.	IX^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
20	Mars E.	104 7 10	2994	102 36 50	2985	101 6 18	2977	99 35 36	2967
21	Aldebaran W.	69 23 2	2724	70 59 10	2714	72 35 32	2704	74 12 7	2694
	Pollux W.	28 4 34	2877	29 37 22	2849	31 10 47	2823	32 44 45	2800
	Saturn E.	35 31 30	2795	33 56 55	2795	32 22 20	2797	30 47 48	2800
	Jupiter E.	39 31 27	2773	37 56 24	2769	36 21 15	2766	34 46 2	2764
	Spica E.	64 21 49	2685	62 44 49	2677	61 7 38	2668	59 30 15	2658
	Mars E.	91 59 5	2920	90 27 11	2909	88 55 4	2900	87 22 45	2890
	Sun E.	132 5 27	3032	130 35 54	3023	129 6 10	3013	127 36 13	3002
22	Aldebaran W.	82 18 24	2643	83 56 20	2632	85 34 31	2622	87 12 56	2612
	Pollux W.	40 41 29	2705	42 18 3	2689	43 54 58	2672	45 32 15	2657
	Jupiter E.	26 49 43	2773	25 14 40	2782	23 39 48	2795	22 5 14	2814
	Spica E.	51 20 12	2612	49 41 33	2602	48 2 41	2593	46 23 36	2583
	Mars E.	79 37 57	2839	78 4 20	2828	76 30 29	2818	74 56 25	2807
	Sun E.	120 3 13	2950	118 31 58	2939	117 0 28	2928	115 28 45	2916
23	Pollux W.	53 43 37	2586	55 22 51	2572	57 2 24	2559	58 42 15	2546
	Regulus W.	16 49 53	2686	18 26 52	2647	20 4 43	2615	21 43 17	2588
	Spica E.	38 4 53	2535	36 24 28	2526	34 43 51	2516	33 3 0	2507
	Mars E.	67 2 30	2753	65 27 0	2741	63 51 15	2731	62 15 16	2719
	Sun E.	107 46 32	2860	106 13 22	2848	104 39 56	2836	103 6 15	2824
24	Pollux W.	67 6 2	2481	68 47 42	2469	70 29 39	2457	72 11 53	2443
	Regulus W.	30 4 18	2486	31 45 51	2470	33 27 47	2453	35 10 6	2438
	Mars E.	54 11 31	2662	52 34 0	2651	50 56 14	2640	49 18 13	2628
	Sun E.	95 13 54	2763	93 38 38	2751	92 3 6	2738	90 27 17	2726
25	Pollux W.	80 47 27	2383	82 31 26	2372	84 15 41	2360	86 0 13	2349
	Regulus W.	43 46 53	2368	45 31 13	2355	47 15 53	2342	49 0 51	2330
	Saturn W.	20 6 22	2632	21 44 33	2580	23 23 56	2536	25 4 20	2498
	Jupiter W.	15 48 7	2728	17 24 10	2650	19 1 57	2588	20 41 8	2539
	Mars E.	41 4 21	2574	39 24 51	2564	37 45 7	2554	36 5 9	2545
	Sun E.	82 24 8	2664	80 46 40	2653	79 8 57	2640	77 30 56	2629
26	Pollux W.	94 46 53	2295	96 33 0	2285	98 19 22	2276	100 5 57	2266
	Regulus W.	57 50 10	2270	59 36 53	2260	61 23 52	2248	63 11 8	2238
	Saturn W.	33 37 40	2364	35 22 6	2345	37 7 0	2327	38 52 21	2309
	Jupiter W.	29 11 9	2380	30 55 12	2358	32 39 47	2338	34 24 51	2320
	Mars E.	27 42 18	2507	26 1 14	2503	24 20 4	2500	22 38 50	2493
	Sun E.	69 16 52	2570	67 37 16	2559	65 57 25	2548	64 17 18	2537
27	Regulus W.	72 11 10	2190	73 59 53	2182	75 48 48	2173	77 37 56	2166
	Saturn W.	47 44 49	2239	49 32 18	2228	51 20 4	2217	53 8 7	2207
	Jupiter W.	43 16 10	2247	45 3 28	2235	46 51 4	2224	48 38 56	2213
	Spica W.	18 12 32	2231	20 0 14	2213	21 48 23	2198	23 36 53	2185
	Sun E.	55 53 10	2488	54 11 40	2479	52 29 57	2471	50 48 3	2463
28	Regulus W.	86 46 15	2134	88 36 22	2129	90 26 36	2124	92 16 58	2121
	Saturn W.	62 11 47	2166	64 1 6	2159	65 50 35	2154	67 40 12	2149
	Jupiter W.	57 41 50	2172	59 31 0	2165	61 20 20	2159	63 9 49	2155
	Spica W.	32 43 37	2139	34 33 37	2132	36 23 47	2126	38 14 6	2121
	Sun E.	42 15 55	2430	40 33 3	2424	38 50 3	2419	37 6 56	2416

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MEAN TIME.

LUNAR DISTANCES.

Day of the Month.	Star's Name and Position.	*Midnight.*	P.L. of diff.	XV^h.	P.L. of diff.	XVIII^h.	P.L. of diff.	XXI^h.	P.L. of diff.
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
20	Mars E.	98 4 41	2958	96 33 35	2948	95 2 17	2938	93 30 47	2929
21	Aldebaran W.	75 48 55	2684	77 25 57	2674	79 3 12	2663	80 40 41	2653
	Pollux W.	34 19 13	2779	35 54 9	2759	37 29 31	2740	39 5 18	2722
	Saturn E.	29 13 20	2805	27 38 59	2814	26 4 50	2827	24 30 57	2843
	Jupiter E.	33 10 47	2762	31 35 29	2762	30 0 11	2763	28 24 55	2766
	Spica E.	57 52 39	2649	56 14 51	2640	54 36 51	2631	52 58 38	2621
	Mars E.	85 50 14	2880	84 17 29	2870	82 44 32	2859	81 11 21	2849
	Sun E.	126 6 3	2992	124 35 40	2982	123 5 4	2972	121 34 16	2960
22	Aldebaran W.	88 51 34	2602	90 30 27	2591	92 9 34	2580	93 48 56	2570
	Pollux W.	47 9 52	2643	48 47 49	2628	50 26 6	2614	52 4 42	2600
	Jupiter E.	20 31 5	2841	18 57 31	2878	17 24 44	2930	15 53 4	3004
	Spica E.	44 44 18	2574	43 4 47	2564	41 25 2	2554	39 45 4	2545
	Mars E.	73 22 6	2797	71 47 34	2785	70 12 47	2775	68 37 46	2763
	Sun E.	113 56 47	2905	112 24 35	2894	110 52 9	2883	109 19 28	2871
23	Pollux W.	60 22 25	2533	62 2 52	2520	63 43 38	2507	65 24 41	2494
	Regulus W.	23 22 28	2564	25 2 12	2542	26 42 27	2522	28 23 9	2503
	Spica E.	31 21 56	2498	29 40 40	2489	27 59 11	2482	26 17 32	2473
	Mars E.	60 39 1	2708	59 2 31	2696	57 25 46	2685	55 48 46	2674
	Sun E.	101 32 18	2812	99 58 6	2800	98 23 38	2788	96 48 54	2776
24	Pollux W.	73 54 26	2432	75 37 15	2419	77 20 22	2408	79 3 46	2396
	Regulus W.	36 52 46	2423	38 35 48	2410	40 19 9	2395	42 2 51	2381
	Mars E.	47 39 56	2618	46 1 25	2606	44 22 38	2596	42 43 37	2585
	Sun E.	88 51 12	2714	87 14 51	2701	85 38 13	2689	84 1 19	2677
25	Pollux W.	87 45 1	2338	89 30 5	2326	91 15 26	2316	93 1 2	2306
	Regulus W.	50 46 7	2317	52 31 42	2305	54 17 34	2293	56 3 43	2281
	Saturn W.	26 45 37	2465	28 27 40	2436	30 10 24	2410	31 53 45	2386
	Jupiter W.	22 21 27	2497	24 2 44	2462	25 44 50	2431	27 27 40	2404
	Mars E.	34 24 58	2535	32 44 34	2527	31 3 59	2520	29 23 13	2513
	Sun E.	75 52 40	2616	74 14 7	2604	72 35 18	2593	70 56 13	2581
26	Pollux W.	101 52 46	2257	103 39 49	2248	105 27 6	2240	107 14 34	2232
	Regulus W.	64 58 39	2228	66 46 25	2218	68 34 26	2208	70 22 41	2199
	Saturn W.	40 38 7	2293	42 24 16	2278	44 10 47	2265	45 57 38	2252
	Jupiter W.	36 10 21	2304	37 56 15	2288	39 42 33	2274	41 29 11	2260
	Mars E.	20 57 35	2501	19 16 23	2507	17 35 19	2519	15 54 32	2538
	Sun E.	62 36 57	2526	60 56 20	2517	59 15 30	2507	57 34 27	2497
27	Regulus W.	79 27 15	2158	81 16 45	2151	83 6 26	2145	84 56 16	2139
	Saturn W.	54 56 24	2197	56 44 56	2188	58 33 41	2180	60 22 38	2173
	Jupiter W.	50 27 4	2204	52 15 26	2194	54 4 2	2186	55 52 50	2179
	Spica W.	25 25 43	2174	27 14 50	2164	29 4 12	2155	30 53 48	2146
	Sun E.	49 5 58	2455	47 23 42	2448	45 41 15	2442	43 58 40	2435
28	Regulus W.	94 7 25	2118	95 57 57	2115	97 48 33	2113	99 39 12	2112
	Saturn W.	69 29 56	2144	71 19 48	2141	73 9 44	2138	74 59 46	2136
	Jupiter W.	64 59 25	2150	66 49 9	2146	68 38 58	2143	70 28 51	2140
	Spica W.	40 4 33	2117	41 55 6	2113	43 45 45	2110	45 36 29	2107
	Sun E.	35 23 44	2412	33 40 27	2409	31 57 5	2407	30 13 41	2405

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Day of the Month.	Airy's Day Numbers—For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of E	F	G	H	Value of L
1	1·49776	1·64537	0·38785	1·38774	28·846
2	1·49341	1·64657	0·38847	1·38811	28·964
3	1·48900	1·64770	0·38909	1·38847	29·091
4	1·48451	1·64877	0·38971	1·38882	29·226
5	1·47995	1·64978	0·39033	1·38916	29·370
6	1·47532	1·65072	0·39096	1·38949	29·526
7	1·47061	1·65160	0·39158	1·38980	29·696
8	1·46583	1·65242	0·39221	1·39011	29·875
9	1·46098	1·65318	0·39284	1·39041	30·063
10	1·45605	1·65388	0·39347	1·39069	30·259
11	1·45105	1·65451	0·39410	1·39096	30·463
12	1·44597	1·65509	0·39474	1·39122	30·677
13	1·44082	1·65560	0·39537	1·39146	30·901
14	1·43559	1·65606	0·39600	1·39170	31·133
15	1·43029	1·65645	0·39663	1·39193	31·375
16	1·42490	1·65678	0·39726	1·39214	31·627
17	1·41944	1·65704	0·39790	1·39234	31·887
18	1·41390	1·65725	0·39854	1·39254	32·157
19	1·40829	1·65739	0·39918	1·39272	32·434
20	1·40260	1·65746	0·39981	1·39289	32·721
21	1·39684	1·65748	0·40045	1·39304	33·016
22	1·39099	1·65744	0·40108	1·39317	33·321
23	1·38507	1·65734	0·40172	1·39330	33·633
24	1·37906	1·65718	0·40235	1·39342	33·954
25	1·37297	1·65695	0·40298	1·39352	34·285
26	1·36681	1·65666	0·40360	1·39361	34·623
27	1·36057	1·65630	0·40423	1·39369	34·970
28	1·35425	1·65589	0·40485	1·39376	35·325
29	1·34786	1·65541	0·40547	1·39382	35·685
30	1·34138	1·65487	0·40609	1·39387	36·053
31	1·33483	1·65427	0·40671	1·39390	36·430
32	1·32819	1·65361	0·40732	1·39392	36·814

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Day of the Month.	Bessel's Day Numbers— For correcting the Places of the Fixed Stars. At Mean Midnight, Logarithms of A	B	C	D	Mean Time of Transit of the First Point of Aries.	Mean Equinoctial Time, adding 0d·96193. Days.	From Mean Noon of January 1. Day of the Year.	Fraction of the Year.*
					h m s			
1	+0·8102	+1·2832	+0·0943	−9·7638	7 17 30·31	253	334	·9145
2	0·7887	1·2859	0·0955	9·7480	7 13 34·40	254	335	·9172
3	0·7658	1·2885	0·0967	9·7320	7 9 38·49	255	336	·9199
4	+0·7416	+1·2910	+0·0980	−9·7158	7 5 42·58	256	337	·9227
5	0·7157	1·2933	0·0992	9·6995	7 1 46·66	257	338	·9254
6	0·6881	1·2954	0·1004	9·6831	6 57 50·75	258	339	·9282
7	+0·6584	+1·2974	+0·1016	−9·6666	6 53 54·84	259	340	·9309
8	0·6264	1·2993	0·1029	9·6501	6 49 58·93	260	341	·9336
9	0·5917	1·3010	0·1041	9·6335	6 46 3·02	261	342	·9364
10	+0·5538	+1·3025	+0·1053	−9·6169	6 42 7·11	262	343	·9391
11	0·5122	1·3040	0·1065	9·6004	6 38 11·19	263	344	·9418
12	0·4659	1·3053	0·1078	9·5839	6 34 15·28	264	345	·9446
13	+0·4140	+1·3064	+0·1090	−9·5676	6 30 19·37	265	346	·9473
14	0·3549	1·3074	0·1102	9·5514	6 26 23·46	266	347	·9501
15	0·2862	1·3083	0·1114	9·5355	6 22 27·54	267	348	·9528
16	+0·2045	+1·3090	+0·1127	−9·5199	6 18 31·63	268	349	·9555
17	0·1035	1·3096	0·1139	9·5046	6 14 35·72	269	350	·9583
18	9·9715	1·3101	0·1151	9·4897	6 10 39·81	270	351	·9610
19	+9·7806	+1·3104	+0·1163	−9·4753	6 6 43·90	271	352	·9637
20	+9·4315	1·3106	0·1176	9·4615	6 2 47·98	272	353	·9665
21	−8·8013	1·3106	0·1188	9·4482	5 58 52·07	273	354	·9692
22	−9·5986	+1·3105	+0·1200	−9·4357	5 54 56·16	274	355	·9720
23	9·8634	1·3103	0·1212	9·4239	5 51 0·24	275	356	·9747
24	0·0267	1·3099	0·1224	9·4129	5 47 4·33	276	357	·9774
25	−0·1450	+1·3094	+0·1236	−9·4029	5 43 8·42	277	358	·9802
26	0·2378	1·3087	0·1248	9·3938	5 39 12·51	278	359	·9829
27	0·3140	1·3079	0·1260	9·3858	5 35 16·60	279	360	·9856
28	−0·3788	+1·3070	+0·1271	−9·3789	5 31 20·69	280	361	·9884
29	0·4350	1·3060	0·1283	9·3730	5 27 24·77	281	362	·9911
30	0·4847	1·3048	0·1295	9·3684	5 23 28·86	282	363	·9939
31	0·5291	1·3034	0·1307	9·3649	5 19 32·95	283	364	·9966
32	−0·5693	+1·3019	+0·1318	−9·3627	5 15 37·04	284	365	·9993

* Add ·0031 if Fraction be required for the time t, see page 327.

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Mean Noon.		Apparent Obliquity.	The Sun's Horizontal Parallax.	The Sun's Aberration.	Precession in Longitude.	Equation of Equinoxes. In Long.	Equation of Equinoxes. In R.A. (*in time*)	Mean Longitude of ☾'s ascending Node.
		° ′ 23 27						
1861.		″	″	″	″	″	s	° ′
Jan.	1	30·14	8·72	−20·79	0·00	+16·16	+0·99	293 23·6
	11	30·16	8·72	20·79	1·38	16·57	1·02	292 51·8
	21	30·22	8·71	20·77	2·75	16·94	1·04	292 20·0
	31	30·31	8·70	20·74	4·13	17·14	1·05	291 48·2
Feb.	10	30·41	8·69	20·71	5·50	17·17	1·05	291 16·4
	20	30·50	8·67	20·66	6·88	17·05	1·04	290 44·7
Mar.	2	30·55	8·65	20·61	8·26	16·81	1·03	290 12·9
	12	30·55	8·63	20·56	9·63	16·47	1·01	289 41·1
	22	30·47	8·60	20·50	11·01	16·09	0·98	289 9·4
Apr.	1	30·33	8·58	20·44	12·38	15·72	0·96	288 37·6
	11	30·14	8·55	20·39	13·76	15·41	0·94	288 5·8
	21	29·90	8·53	20·33	15·13	15·21	0·93	287 34·1
May	1	29·63	8·51	20·28	16·51	15·12	0·93	287 2·3
	11	29·35	8·49	20·23	17·89	15·18	0·93	286 30·5
	21	29·09	8·47	20·19	19·26	15·39	0·94	285 58·8
	31	28·85	8·46	20·16	20·64	15·70	0·96	285 27·0
June	10	28·66	8·45	20·13	22·01	16·11	0·99	284 55·2
	20	28·53	8·44	20·11	23·39	16·56	1·01	284 23·5
	30	28·46	8·44	20·11	24·77	17·02	1·04	283 51·7
July	10	28·45	8·44	20·11	26·14	17·44	1·07	283 19·9
	20	28·48	8·44	20·12	27·52	17·77	1·09	282 48·1
	30	28·55	8·45	20·14	28·89	17·99	1·10	282 16·3
Aug.	9	28·64	8·46	20·17	30·27	18·07	1·10	281 44·5
	19	28·72	8·48	20·21	31·65	18·01	1·10	281 12·8
	29	28·79	8·50	20·25	33·02	17·82	1·09	280 41·0
Sept.	8	28·80	8·52	20·30	34·40	17·52	1·07	280 9·2
	18	28·77	8·54	20·36	35·77	17·14	1·05	279 37·5
	28	28·67	8·57	20·42	37·15	16·74	1·02	279 5·7
Oct.	8	28·51	8·59	20·48	38·53	16·36	1·00	278 33·9
	18	28·29	8·62	20·54	39·90	16·06	0·98	278 2·2
	28	28·03	8·64	20·59	41·28	15·86	0·97	277 30·4
Nov.	7	27·75	8·66	20·65	42·65	15·81	0·96	276 58·6
	17	27·46	8·68	20·69	44·03	15·90	0·97	276 26·9
	27	27·20	8·70	20·73	45·40	16·15	0·99	275 55·1
Dec.	7	26·97	8·71	20·76	46·78	16·52	1·01	275 23·3
	17	26·80	8·72	20·78	48·16	16·96	1·04	274 51·5
	27	26·71	8·72	20·79	49·53	17·42	1·07	274 19·7
	37	26·69	8·72	−20·79	50·91	+17·85	+1·09	273 48·0

	° ′ ″	Daily Motion
Mean Obliquity, Jan. 1, 1861 - - - - -	23 27 26·92	′
Precession of the Equinoxes for the Year 1861	50·2549	−3·18
——————— for 1 Day	·1376	

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Month and Day at Mean Noon.	X, True Eq^{n} of Date.	Reduc. to M. Eq^{n} of Jan. 1.	Y, True Eq^{n} of Date.	Reduc. to M. Eq^{n} of Jan. 1.	Z, True Eq^{n} of Date.	Reduc. to M. Eq^{n} of Jan. 1.
Jan. 1	+0·1900004	−761	−0·8849486	−196	−0·3840224	+ 79
2	·2071326	766	·8817178	210	·3826204	73
3	·2242022	770	·8782134	224	·3810995	66
4	·2412036	774	·8744352	238	·3794600	59
5	·2581319	778	·8703842	252	·3777021	52
6	·2749808	782	·8660612	266	·3758261	45
7	·2917449	785	·8614680	281	·3738329	38
8	·3084196	788	·8566056	296	·3717230	31
9	·3249988	791	·8514750	311	·3694964	24
10	·3414769	794	·8460780	326	·3671547	17
11	·3578486	796	·8404166	342	·3646977	9
12	·3741081	798	·8344924	357	·3621269	+ 2
13	·3902509	800	·8283068	373	·3594428	− 6
14	·4062710	801	·8218630	389	·3566464	14
15	·4221630	802	·8151630	405	·3537390	22
16	·4379223	803	·8082096	421	·3507217	30
17	·4535444	804	·8010042	437	·3475949	38
18	·4690239	805	·7935504	453	·3443604	46
19	·4843561	805	·7858509	469	·3410193	55
20	·4995370	806	·7779080	485	·3375726	64
21	·5145617	805	·7697250	503	·3340215	73
22	·5294252	804	·7613049	519	·3303676	81
23	·5441246	802	·7526497	536	·3266117	89
24	·5586551	798	·7437629	553	·3227554	97
25	·5730129	793	·7346463	570	·3187994	105
26	·5871937	787	·7253035	587	·3147451	114
27	·6011937	782	·7157375	603	·3105939	122
28	·6150087	776	·7059507	619	·3063470	131
29	·6286349	770	·6959458	635	·3020055	140
30	·6420681	764	·6857262	652	·2975706	149
31	·6553043	758	·6752940	669	·2930436	158
Feb. 1	·6683398	752	·6646530	685	·2884260	167
2	·6811703	745	·6538060	701	·2837190	176
3	·6937912	737	·6427559	716	·2789238	184
4	·7061988	729	·6315061	732	·2740420	193
5	·7183893	720	·6200603	747	·2690751	201
6	·7303588	711	·6084217	763	·2640246	210
7	·7421030	702	·5965941	779	·2588921	218
8	·7536175	693	·5845815	795	·2536794	227
9	·7648995	684	·5723875	810	·2483878	235
10	·7759452	673	·5600163	825	·2430193	244
11	·7867504	661	·5474723	839	·2375758	252
12	·7973129	649	·5347591	853	·2320589	261
13	·8076287	636	·5218820	867	·2264710	270
14	·8176952	623	·5088448	881	·2208135	279
15	·8275090	610	·4956517	895	·2150884	287
16	+0·8370678	−596	−0·4823080	−909	−0·2092978	−295

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Feb. 16	+0·8370678	−596	−0·4823080	− 909	−0·2092978	−295
17	·8463688	582	·4688174	922	·2034437	303
18	·8554104	568	·4551846	935	·1975277	312
19	·8641892	554	·4414137	948	·1915518	321
20	·8727038	539	·4275091	961	·1855179	329
21	·8809518	524	·4134755	974	·1794281	337
22	·8889316	508	·3993174	986	·1732842	345
23	·8966410	492	·3850385	998	·1670878	353
24	·9040782	476	·3706433	1010	·1608410	361
25	·9112414	460	·3561356	1021	·1545454	368
26	·9181286	443	·3415200	1032	·1482030	376
27	·9247382	426	·3268006	1043	·1418154	383
28	·9310680	408	·3119814	1053	·1353847	391
March 1	·9371164	390	·2970666	1063	·1289124	398
2	·9428816	372	·2820608	1073	·1224006	406
3	·9483620	353	·2669682	1082	·1158512	413
4	·9535552	334	·2517933	1091	·1092660	420
5	·9584604	315	·2365408	1100	·1026471	427
6	·9630749	296	·2212151	1108	·0959966	434
7	·9673984	277	·2058214	1116	·0893164	441
8	·9714287	257	·1903643	1124	·0826088	448
9	·9751644	237	·1748485	1132	·0758757	454
10	·9786049	217	·1592787	1139	·0691192	461
11	·9817491	197	·1436603	1146	·0623415	467
12	·9845957	177	·1279987	1153	·0555452	473
13	·9871442	156	·1122984	1159	·0487320	479
14	·9893947	135	·0965651	1165	·0419045	485
15	·9913467	113	·0808032	1171	·0350646	491
16	·9929992	91	·0650185	1176	·0282148	497
17	·9943534	69	·0492154	1181	·0213571	502
18	·9954090	48	·0333986	1185	·0144934	507
19	·9961664	26	·0175733	1189	·0076260	512
20	·9966256	− 4	−0·0017445	1193	−0·0007571	517
21	·9967877	+ 18	+0·0140832	1196	+0·0061114	522
22	·9966530	41	·0299055	1199	·0129775	526
23	·9962217	64	·0457179	1201	·0198393	530
24	·9954950	88	·0615160	1203	·0266949	534
25	·9944734	112	·0772954	1205	·0335424	538
26	·9931572	135	·0930514	1207	·0403797	542
27	·9915472	158	·1087798	1209	·0472050	546
28	·9896444	181	·1244766	1210	·0540166	550
29	·9874490	205	·1401371	1211	·0608125	554
30	·9849617	229	·1557569	1211	·0675907	557
31	·9821834	253	·1713320	1210	·0743495	560
April 1	·9791147	277	·1868584	1210	·0810872	563
2	·9757560	301	·2023312	1209	·0878015	565
3	+0·9721090	+325	+0·2177453	−1208	+0·0944905	−567

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April 3	+0·9721090	+ 325	+0·2177453	−1208	+0·0944905	−567
4	·9681744	349	·2330963	1207	·1011520	569
5	·9639532	374	·2483793	1206	·1077840	571
6	·9594466	400	·2635902	1204	·1143848	573
7	·9546557	426	·2787250	1201	·1209525	574
8	·9495820	452	·2937783	1198	·1274849	575
9	·9442279	478	·3087444	1195	·1339793	576
10	·9385944	503	·3236194	1192	·1404343	577
11	·9326839	528	·3383993	1188	·1468497	578
12	·9264986	551	·3530788	1183	·1532181	578
13	·9200410	574	·3676533	1178	·1595425	579
14	·9133136	598	·3821188	1173	·1658198	578
15	·9063182	621	·3964715	1168	·1720480	578
16	·8990578	644	·4107066	1163	·1782253	578
17	·8915354	667	·4248202	1157	·1843498	577
18	·8837538	691	·4388085	1151	·1904200	576
19	·8757150	716	·4526681	1144	·1964343	575
20	·8674226	741	·4663951	1137	·2023909	574
21	·8588792	766	·4799847	1130	·2082880	572
22	·8500876	792	·4934345	1122	·2141245	570
23	·8410506	817	·5067412	1113	·2198989	568
24	·8317706	843	·5199015	1104	·2256096	566
25	·8222514	869	·5329112	1095	·2312551	564
26	·8124944	895	·5457676	1086	·2368340	561
27	·8025030	920	·5584671	1076	·2423449	558
28	·7922799	945	·5710065	1066	·2477862	555
29	·7818275	969	·5833823	1056	·2531565	552
30	·7711492	993	·5955905	1046	·2584542	549
May 1	·7602470	1017	·6076283	1035	·2636778	545
2	·7491247	1041	·6194920	1024	·2688258	541
3	·7377852	1065	·6311781	1012	·2738968	537
4	·7262315	1089	·6426832	1000	·2788893	532
5	·7144677	1113	·6540034	988	·2838016	527
6	·7024967	1136	·6651358	976	·2886323	522
7	·6903215	1160	·6760766	962	·2933800	517
8	·6779462	1184	·6868228	948	·2980431	511
9	·6653750	1207	·6973706	934	·3026203	505
10	·6526116	1230	·7077173	920	·3071099	499
11	·6396600	1253	·7178595	905	·3115110	493
12	·6265246	1277	·7277947	890	·3158221	487
13	·6132097	1300	·7375197	875	·3200422	480
14	·5997195	1323	·7470323	859	·3241700	473
15	·5860584	1346	·7563300	843	·3282045	466
16	·5722310	1369	·7654102	826	·3321446	459
17	·5582411	1391	·7742700	808	·3359892	451
18	·5440939	1413	·7829082	790	·3397376	443
19	+0·5297922	+1435	+0·7913232	− 772	+0·3433891	−435

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May 19	+0·5297922	+1435	+0·7913232	−772	+0·3433891	−435
20	·5153409	1456	·7995117	753	·3469423	427
21	·5007446	1477	·8074727	734	·3503969	419
22	·4860070	1499	·8152046	715	·3537520	411
23	·4711323	1520	·8227052	696	·3570067	402
24	·4561245	1541	·8299730	677	·3601603	393
25	·4409877	1562	·8370058	657	·3632121	384
26	·4257259	1582	·8438022	636	·3661611	375
27	·4103430	1602	·8503600	614	·3690067	365
28	·3948432	1622	·8566774	592	·3717480	355
29	·3792304	1641	·8627532	570	·3743844	345
30	·3635092	1660	·8685858	548	·3769152	335
31	·3476837	1679	·8741726	526	·3793395	325
June 1	·3317583	1697	·8795124	503	·3816567	315
2	·3157366	1715	·8846032	480	·3838655	305
3	·2996236	1732	·8894430	456	·3859657	294
4	·2834247	1749	·8940308	432	·3879564	283
5	·2671442	1766	·8983648	408	·3898371	272
6	·2507863	1782	·9024438	383	·3916070	261
7	·2343566	1798	·9062662	358	·3932655	249
8	·2178605	1814	·9098306	333	·3948123	237
9	·2013025	1830	·9131366	308	·3962467	225
10	·1846872	1845	·9161830	282	·3975685	213
11	·1680203	1859	·9189688	255	·3987774	201
12	·1513073	1873	·9214944	228	·3998732	189
13	·1345526	1887	·9237582	201	·4008555	177
14	·1177611	1900	·9257612	174	·4017245	165
15	·1009378	1913	·9275022	146	·4024801	152
16	·0840878	1925	·9289809	117	·4031218	139
17	·0672158	1936	·9301979	88	·4036498	126
18	·0503266	1947	·9311536	58	·4040645	113
19	·0334245	1958	·9318469	− 28	·4043653	100
20	+0·0165140	1968	·9322790	+ 2	·4045527	87
21	−0·0004003	1977	·9324494	32	·4046267	74
22	·0173139	1986	·9323584	62	·4045872	61
23	·0342225	1994	·9320068	92	·4044346	47
24	·0511218	2002	·9313939	123	·4041686	33
25	·0680072	2009	·9305202	154	·4037894	19
26	·0848744	2015	·9293854	185	·4032968	− 5
27	·1017190	2021	·9279902	216	·4026915	+ 9
28	·1185364	2027	·9263344	248	·4019728	23
29	·1353221	2032	·9244180	280	·4011412	37
30	·1520715	2036	·9222410	312	·4001965	52
July 1	·1687794	2039	·9198046	344	·3991392	66
2	·1854414	2042	·9171084	376	·3979693	81
3	·2020523	2045	·9141532	408	·3966868	95
4	−0·2186076	+2047	+0·9109396	+441	+0·3952924	+110

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July 4	−0·2186076	+2047	+0·9109396	+ 441	+0·3952924	+110
5	·2351021	2048	·9074684	474	·3937859	125
6	·2515308	2047	·9037400	507	·3921681	140
7	·2678887	2046	·8997552	541	·3904391	155
8	·2841711	2044	·8955162	574	·3885994	170
9	·3003728	2042	·8910232	608	·3866498	185
10	·3164884	2039	·8862786	642	·3845909	199
11	·3325138	2035	·8812832	675	·3824233	214
12	·3484442	2031	·8760386	709	·3801474	230
13	·3642746	2026	·8705474	743	·3777645	245
14	·3800005	2021	·8648108	777	·3752753	260
15	·3956175	2015	·8588306	810	·3726802	275
16	·4111221	2008	·8526094	844	·3699806	290
17	·4265095	2001	·8461482	877	·3671768	304
18	·4417754	1993	·8394504	911	·3642703	319
19	·4569161	1985	·8325166	945	·3612617	334
20	·4719278	1976	·8253498	978	·3581517	349
21	·4868060	1966	·8179514	1011	·3549412	364
22	·5015475	1955	·8103239	1044	·3516315	378
23	·5161478	1943	·8024684	1077	·3482227	393
24	·5306041	1930	·7943879	1110	·3447162	408
25	·5449115	1916	·7860837	1143	·3411127	422
26	·5590664	1901	·7775579	1176	·3374132	437
27	·5730651	1886	·7688124	1209	·3336181	452
28	·5869035	1870	·7598490	1242	·3297286	467
29	·6005773	1853	·7506709	1275	·3257459	481
30	·6140827	1836	·7412793	1307	·3216705	496
31	·6274154	1818	·7316770	1338	·3175037	511
Aug. 1	·6405711	1799	·7218657	1369	·3132464	525
2	·6535456	1780	·7118488	1400	·3088996	539
3	·6663356	1760	·7016283	1431	·3044646	553
4	·6789365	1739	·6912078	1462	·2999426	567
5	·6913436	1717	·6805893	1493	·2953349	581
6	·7035543	1695	·6697769	1523	·2906429	595
7	·7155638	1673	·6587733	1553	·2858681	609
8	·7273685	1650	·6475816	1583	·2810115	623
9	·7389652	1626	·6362053	1612	·2760750	636
10	·7503499	1601	·6246481	1640	·2710599	649
11	·7615195	1575	·6129138	1668	·2659679	662
12	·7724709	1549	·6010054	1696	·2608005	675
13	·7832007	1522	·5889273	1723	·2555592	688
14	·7937064	1494	·5766823	1750	·2502457	700
15	·8039850	1465	·5642740	1777	·2448613	713
16	·8140340	1436	·5517063	1803	·2394076	726
17	·8238508	1406	·5389825	1829	·2338863	739
18	·8334320	1376	·5261061	1855	·2282987	751
19	−0·8427760	+1345	+0·5130809	+1881	+0·2226466	+763

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Aug. 19	−0·8427760	+1345	+0·5130809	+1881	+0·2226466	+ 763
20	·8518802	1314	·4999102	1906	·2169313	774
21	·8607416	1282	·4865976	1930	·2111545	785
22	·8693584	1250	·4731463	1953	·2053175	796
23	·8777276	1218	·4595597	1976	·1994217	806
24	·8858470	1185	·4458415	1998	·1934692	816
25	·8937140	1152	·4319951	2019	·1874603	827
26	·9013254	1118	·4180239	2040	·1813976	838
27	·9086792	1083	·4039317	2060	·1752824	849
28	·9157726	1048	·3897223	2080	·1691164	860
29	·9226038	1012	·3753991	2099	·1629010	871
30	·9291694	975	·3609664	2118	·1566381	881
31	·9354674	937	·3464282	2136	·1503294	890
Sept. 1	·9414952	899	·3317888	2154	·1439768	899
2	·9472509	861	·3170524	2172	·1375821	908
3	·9527322	822	·3022234	2189	·1311471	917
4	·9579364	783	·2873061	2205	·1246739	925
5	·9628626	743	·2723051	2220	·1181644	933
6	·9675082	703	·2572252	2235	·1116206	941
7	·9718722	663	·2420710	2249	·1050446	949
8	·9759529	622	·2268473	2262	·0984383	957
9	·9797492	581	·2115585	2274	·0918039	964
10	·9832602	540	·1962095	2286	·0851433	971
11	·9864849	499	·1808047	2298	·0784586	978
12	·9894222	457	·1653487	2309	·0717516	984
13	·9920720	414	·1498461	2319	·0650244	990
14	·9944325	371	·1343019	2328	·0582791	996
15	·9965039	328	·1187198	2336	·0515174	1001
16	·9982857	285	·1031039	2344	·0447410	1006
17	0·9997769	242	·0874593	2351	·0379522	1011
18	1·0009778	199	·0717893	2357	·0311523	1016
19	1·0018878	156	·0560993	2363	·0243438	1020
20	1·0025060	114	·0403928	2368	·0175281	1024
21	1·0028323	72	·0246742	2373	·0107071	1028
22	1·0028665	+ 29	+0·0089479	2377	+0·0038828	1031
23	1·0026076	− 15	−0·0067819	2380	−0·0029429	1034
24	1·0020555	60	·0225107	2382	·0097683	1036
25	1·0012100	106	·0382342	2383	·0165914	1038
26	1·0000700	152	·0539482	2383	·0234103	1040
27	0·9986360	198	·0696477	2382	·0302230	1042
28	·9969070	244	·0853285	2381	·0370275	1043
29	·9948839	290	·1009854	2380	·0438216	1044
30	·9925660	336	·1166132	2379	·0506031	1045
Oct. 1	·9899539	382	·1322075	2377	·0573701	1046
2	·9870475	428	·1477638	2375	·0641206	1046
3	·9838474	473	·1632768	2372	·0708523	1046
4	−0·9803547	− 518	−0·1787414	+2367	−0·0775630	+1045

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Month and Day at Mean Noon.	X, True Eq^{x} of Date.	Reduc. to M. Eq^{x} of Jan. 1.	Y, True Eq^{x} of Date.	Reduc. to M. Eq^{x} of Jan. 1.	Z, True Eq^{x} of Date.	Reduc. to M. Eq^{x} of Jan. 1.
Oct. 4	−0·9803547	− 518	−0·1787414	+2367	−0·0775630	+1045
5	·9765697	562	·1941526	2362	·0842505	1043
6	·9724940	606	·2095051	2356	·0909126	1042
7	·9681277	650	·2247946	2350	·0975473	1041
8	·9634730	694	·2400165	2343	·1041526	1039
9	·9585312	739	·2551657	2335	·1107264	1037
10	·9533037	785	·2702372	2326	·1172665	1034
11	·9477927	831	·2852267	2316	·1237710	1031
12	·9419992	877	·3001298	2306	·1302380	1028
13	·9359254	922	·3149418	2295	·1366655	1024
14	·9295732	966	·3296587	2283	·1430517	1020
15	·9229444	1011	·3442764	2270	·1493949	1015
16	·9160412	1056	·3587904	2257	·1556929	1010
17	·9088650	1101	·3731968	2244	·1619443	1005
18	·9014180	1146	·3874915	2230	·1681473	999
19	·8937022	1190	·4016706	2215	·1743000	993
20	·8857196	1234	·4157299	2199	·1804009	987
21	·8774718	1278	·4296650	2183	·1864478	980
22	·8689616	1322	·4434721	2167	·1924391	973
23	·8601904	1366	·4571471	2150	·1983732	966
24	·8511602	1409	·4706862	2131	·2042482	958
25	·8418729	1452	·4840847	2112	·2100622	950
26	·8323312	1495	·4973386	2093	·2158135	942
27	·8225370	1538	·5104438	2073	·2215003	933
28	·8124930	1580	·5233960	2052	·2271206	924
29	·8022014	1622	·5361905	2030	·2326725	915
30	·7916660	1664	·5488230	2008	·2381542	905
31	·7808900	1706	·5612891	1986	·2435636	895
Nov. 1	·7698752	1748	·5735853	1963	·2488992	885
2	·7586250	1789	·5857070	1939	·2541592	874
3	·7471432	1829	·5976497	1914	·2593415	863
4	·7354337	1869	·6094103	1888	·2644447	851
5	·7234997	1908	·6209837	1861	·2694667	839
6	·7113450	1947	·6323667	1833	·2744061	827
7	·6989742	1986	·6435554	1805	·2792612	814
8	·6863903	2025	·6545470	1777	·2840307	801
9	·6735978	2064	·6653379	1748	·2887131	788
10	·6606005	2103	·6759243	1719	·2933068	775
11	·6474030	2141	·6863038	1690	·2978107	761
12	·6340090	2178	·6964726	1660	·3022232	747
13	·6204231	2214	·7064279	1629	·3065430	732
14	·6066490	2250	·7161673	1597	·3107693	718
15	·5926905	2286	·7256877	1564	·3149004	703
16	·5785518	2321	·7349862	1530	·3189351	688
17	·5642368	2356	·7440607	1496	·3228727	673
18	·5497495	2390	·7529084	1461	·3267119	657
19	−0·5350942	−2423	−0·7615257	+1426	−0·3304512	+ 641

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Month and Day at Mean Noon.	X, True Eq^x of Date.	Reduc. to M. Eq^x of Jan. 1.	Y, True Eq^x of Date.	Reduc. to M. Eq^x of Jan. 1.	Z, True Eq^x of Date.	Reduc. to M. Eq^x of Jan. 1.
Nov. 19	−0·5350942	−2423	−0·7615257	+1426	−0·3304512	+641
20	·5202751	2456	·7699109	1391	·3340896	625
21	·5052958	2488	·7780610	1355	·3376262	608
22	·4901610	2520	·7859734	1318	·3410594	591
23	·4748741	2551	·7936452	1280	·3443883	573
24	·4594397	2582	·8010735	1241	·3476116	555
25	·4438628	2613	·8082562	1202	·3507283	537
26	·4281475	2643	·8151906	1162	·3537372	519
27	·4122991	2673	·8218726	1122	·3566367	501
28	·3963209	2702	·8283016	1081	·3594263	482
29	·3802192	2730	·8344746	1040	·3621048	463
30	·3639989	2757	·8403888	999	·3646711	444
Dec. 1	·3476648	2783	·8460428	958	·3671244	425
2	·3312222	2808	·8514344	916	·3694637	405
3	·3146771	2832	·8565604	873	·3716879	386
4	·2980343	2855	·8614200	829	·3737966	366
5	·2812992	2879	·8660116	785	·3757890	346
6	·2644778	2902	·8703332	741	·3776643	326
7	·2475753	2924	·8743846	696	·3794222	306
8	·2305974	2945	·8781638	650	·3810619	285
9	·2135497	2965	·8816702	603	·3825833	264
10	·1964374	2984	·8849028	556	·3839859	243
11	·1792655	3003	·8878612	509	·3852696	222
12	·1620395	3021	·8905442	462	·3864338	200
13	·1447648	3038	·8929512	415	·3874781	179
14	·1274464	3054	·8950816	367	·3884026	157
15	·1100893	3069	·8969354	319	·3892069	135
16	·0926988	3083	·8985118	271	·3898908	113
17	·0752800	3096	·8998102	222	·3904542	91
18	·0578379	3108	·9008304	172	·3908967	68
19	·0403773	3119	·9015718	121	·3912185	45
20	·0229033	3129	·9020346	71	·3914194	+23
21	−0·0054215	3139	·9022182	+20	·3914988	0
22	+0·0120633	3148	·9021220	−32	·3914571	−23
23	·0295459	3155	·9017454	84	·3912937	46
24	·0470209	3161	·9010886	136	·3910086	69
25	·0644829	3166	·9001514	188	·3906020	92
26	·0819266	3171	·8989334	240	·3900734	115
27	·0993460	3175	·8974352	292	·3894231	138
28	·1167357	3177	·8956566	343	·3886513	162
29	·1340901	3178	·8935978	396	·3877580	185
30	·1514033	3178	·8912598	450	·3867434	208
31	·1686695	3177	·8886424	504	·3856077	230
32	+0·1858832	−3177	−0·8857474	−558	−0·3843515	−252

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	h m s	South. ° ′ ″	°	h m	° ′ ″	North. ° ′ ″	9
Jan. 1	17 34 21·78	23 13 41·3	·1093337	22 52·2	224 22 52·2	0 16 52·7	·6533412
						South.	
2	17 40 40·70	23 24 37·2	·1132547	22 54·6	227 18 8·4	0 4 39·1	·6560876
3	17 47 3·25	23 34 28·6	·1169500	22 57·1	230 11 18·4	0 25 54·7	·6585674
4	17 53 29·20	23 43 13·2	·1204271	22 59·6	233 2 37·6	0 46 52·7	·6607814
5	17 59 58·37	23 50 49·3	·1236947	23 2·2	235 52 20·5	1 7 31·8	·6627304
6	18 6 30·52	23 57 14·9	·1267592	23 4·9	238 40 40·8	1 27 50·8	·6644157
7	18 13 5·47	24 2 28·5	·1296273	23 7·6	241 27 52·3	1 47 48·7	·6658384
8	18 19 43·07	24 6 28·2	·1323049	23 10·3	244 14 7·8	2 7 24·4	·6669987
9	18 26 23·11	24 9 12·6	·1347970	23 13·1	246 59 40·4	2 26 36·7	·6678978
10	18 33 5·50	24 10 40·9	·1371080	23 15·9	249 44 42·3	2 45 24·7	·6685360
11	18 39 49·99	24 10 51·0	·1392430	23 18·7	252 29 26·3	3 3 47·3	·6689140
12	18 46 36·52	24 9 42·1	·1412047	23 21·6	255 14 4·7	3 21 43·4	·6690320
13	18 53 24·92	24 7 12·8	·1429966	23 24·5	257 58 49·4	3 39 11·8	·6688899
14	19 0 15·06	24 3 22·3	·1446215	23 27·4	260 43 52·9	3 56 11·4	·6684878
15	19 7 6·83	23 58 9·3	·1460813	23 30·3	263 29 27·4	4 12 40·7	·6678254
16	19 14 0·09	23 51 33·2	·1473775	23 33·3	266 15 45·1	4 28 38·4	·6669023
17	19 20 54·73	23 43 32·5	·1485118	23 36·3	269 2 58·5	4 44 3·0	·6657178
18	19 27 50·65	23 34 6·5	·1494839	23 39·3	271 51 20·3	4 58 52·6	·6642709
19	19 34 47·73	23 23 14·8	·1502943	23 42·3	274 41 3·2	5 13 5·4	·6625612
20	19 41 45·86	23 10 56·2	·1509425	23 45·4	277 32 20·5	5 26 39·3	·6605879
21	19 48 44·96	22 57 10·0	·1514272	23 48·5	280 25 25·3	5 39 32·1	·6583494
22	19 55 44·89	22 41 55·5	·1517470	23 51·5	283 20 31·8	5 51 41·1	·6558453
23	20 2 45·60	22 25 12·1	·1518994	23 54·6	286 17 54·2	6 3 3·7	·6530739
24	20 9 46·99	22 6 59·1	·1518812	23 57·7	289 17 47·2	6 13 36·7	·6500351
25	20 16 48·94	21 47 16·1	·1516892	* *	292 20 26·1	6 23 16·7	·6467278
26	20 23 51·39	21 26 2·5	·1513186	0 0·8	295 26 6·8	6 32 0·0	·6431518
27	20 30 54·24	21 3 17·7	·1507648	0 3·9	298 35 5·7	6 39 42·5	·6393069
28	20 37 57·40	20 39 1·8	·1500213	0 7·0	301 47 39·8	6 46 19·7	·6351938
29	20 45 0·78	20 13 14·0	·1490813	0 10·2	305 4 7·1	6 51 46·7	·6308136
30	20 52 4·28	19 45 54·4	·1479373	0 13·3	308 24 45·9	6 55 58·1	·6261685
31	20 59 7·78	19 17 2·9	·1465807	0 16·4	311 49 55·6	6 58 48·1	·6212616
Feb. 1	21 6 11·20	18 46 39·5	·1450013	0 19·5	315 19 56·1	7 0 10·3	·6160970
2	21 13 14·39	18 14 44·7	·1431883	0 22·6	318 55 7·7	6 59 58·0	·6106810
3	21 20 17·21	17 41 18·8	·1411297	0 25·7	322 35 51·9	6 58 3·8	·6050221
4	21 27 19·52	17 6 22·4	·1388122	0 28·8	326 22 30·4	6 54 20·0	·5991301
5	21 34 21·13	16 29 56·4	·1362209	0 31·9	330 15 25·7	6 48 38·4	·5930180
6	21 41 21·84	15 52 2·4	·1333405	0 35·0	334 14 59·9	6 40 50·7	·5867028
7	21 48 21·42	15 12 41·6	·1301533	0 38·1	338 21 35·7	6 30 48·1	·5802044
8	21 55 19·55	14 31 56·5	·1266404	0 41·1	342 35 35·3	6 18 22·0	·5735473
9	22 2 15·93	13 49 49·6	·1227817	0 44·1	346 57 20·5	6 3 23·8	·5667614
10	22 9 10·17	13 6 24·1	·1185565	0 47·1	351 27 11·8	5 45 45·5	·5598819
11	22 16 1·79	12 21 44·1	·1139416	0 50·0	356 5 27·7	5 25 20·2	·5529505

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	h m s	South. ° ′ ″	°	h m	° ′ ″	South. ° ′ ″	9
Feb. 11	22 16 1·79	12 21 44·1	·1139416	0 50·0	356 5 27·7	5 25 20·2	·5529505
12	22 22 50·27	11 35 54·3	·1089135	0 52·9	0 52 25·1	5 2 2·1	·5460154
13	22 29 34·95	10 49 0·7	·1034483	0 55·7	5 48 16·7	4 35 47·3	·5391314
14	22 36 15·14	10 1 10·0	·0975214	0 58·4	10 53 12·4	4 6 34·5	·5323620
15	22 42 49·96	9 12 30·4	·0911088	1 1·0	16 7 15·6	3 34 25·9	·5257764
16	22 49 18·43	8 23 11·3	·0841858	1 3·6	21 30 24·4	2 59 27·5	·5194517
17	22 55 39·44	7 33 23·6	·0767313	1 6·0	27 2 29·1	2 21 49·9	·5134693
18	23 1 51·73	6 43 19·6	·0687256	1 8·2	32 43 11·8	1 41 49·2	·5079160
19	23 7 53·91	5 53 13·4	·0601533	1 10·3	38 32 5·1	0 59 47·4	·5028794
20	23 13 44·42	5 3 20·4	·0510035	1 12·2	44 28 31·1	0 16 11·9	·4984462
						North.	
21	23 19 21·56	4 13 58·0	·0412710	1 13·9	50 31 42·0	0 28 23·9	·4946986
22	23 24 43·54	3 25 24·5	·0309594	1 15·3	56 40 38·6	1 13 22·0	·4917114
23	23 29 48·46	2 37 59·5	·0200799	1 16·4	62 54 12·2	1 58 0·7	·4895465
24	23 34 34·33	1 52 4·5	·0086541	1 17·2	69 11 5·4	2 41 36·2	·4882506
			9				
25	23 38 59·18	1 8 0·3	·9967134	1 17·7	75 29 53·5	3 23 24·8	·4878531
26	23 43 1·01	0 26 8·9	·9843014	1 17·8	81 49 7·6	4 2 44·9	·4883621
		North.					
27	23 46 37·91	0 13 8·1	·9714734	1 17·4	88 7 16·6	4 38 59·1	·4897670
28	23 49 48·11	0 49 29·1	·9582964	1 16·6	94 22 50·8	5 11 35·7	·4920360
Mar. 1	23 52 29·97	1 22 33·5	·9448494	1 15·3	100 34 24·5	5 40 10·5	·4951204
2	23 54 42·13	1 52 1·9	·9312226	1 13·5	106 40 38·7	6 4 26·8	·4989564
3	23 56 23·47	2 17 36·3	·9175157	1 11·3	112 40 23·6	6 24 16·0	·5034683
4	23 57 33·28	2 39 0·8	·9038392	1 8·5	118 32 39·1	6 39 36·9	·5085733
5	23 58 11·17	2 56 1·6	·8903111	1 5·2	124 16 37·6	6 50 34·9	·5141844
6	23 58 17·28	3 8 28·0	·8770562	1 1·3	129 51 42·0	6 57 20·9	·5202134
7	23 57 52·19	3 16 12·1	·8642044	0 56·9	135 17 27·0	7 0 9·9	·5265748
8	23 56 57·08	3 19 10·1	·8518870	0 52·0	140 33 37·4	6 59 19·8	·5331868
9	23 55 33·62	3 17 22·6	·8402347	0 46·7	145 40 7·8	6 55 10·1	·5399740
10	23 53 44·11	3 10 54·9	·8293744	0 41·0	150 37 0·5	6 48 1·2	·5468675
11	23 51 31·34	2 59 57·4	·8194251	0 34·9	155 24 24·3	6 38 13·6	·5538052
12	23 48 58·64	2 44 45·6	·8104937	0 28·4	160 2 33·7	6 26 6·7	·5607328
13	23 46 9·77	2 25 40·7	·8026717	0 21·6	164 31 46·8	6 11 59·4	·5676026
14	23 43 8·79	2 3 8·9	·7960312	0 14·7	168 52 25·4	5 56 8·8	·5743745
15	23 39 59·97	1 37 40·2	·7906229	0 7·7	173 4 53·2	5 38 50·8	·5810136
16	23 36 47·65	1 9 48·2	·7864726	{0 / 23} {0·6 / 53·5}	177 9 34·9	5 20 19·7	·5874907
17	23 33 36·07	0 40 8·5	·7835829	23 46·5	181 6 56·5	5 0 48·2	·5937819
18	23 30 29·30	0 9 17·6	·7819325	23 39·6	184 57 23·7	4 40 27·6	·5998677
		South.					
19	23 27 31·05	0 22 8·5	·7814787	23 32·9	188 41 22·2	4 19 28·0	·6057316
20	23 24 44·59	0 53 35·8	·7821601	23 26·4	192 19 17·6	3 57 58·0	·6113612
21	23 22 12·75	1 24 32·5	·7839010	23 20·3	195 51 34·1	3 36 5·4	·6167466

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	h m s	South. ° ′ ″	9	h m	° ′ ″	North. ° ′ ″	9
Mar. 21	23 22 12·75	1 24 32·5	·7839010	23 20·3	195 51 34·1	3 36 5·4	·6167466
22	23 19 57·83	1 54 30·4	·7866147	23 14·4	199 18 35·9	3 13 56·6	·6218796
23	23 18 1·63	2 23 5·4	·7902074	23 8·9	202 40 45·8	2 51 37·4	·6267547
24	23 16 25·46	2 49 57·1	·7945833	23 3·7	205 58 25·9	2 29 12·7	·6313672
25	23 15 10·15	3 14 49·1	·7996458	22 58·8	209 11 57·1	2 6 46·9	·6357146
26	23 14 16·16	3 37 29·0	·8053023	22 54·3	212 21 39·8	1 44 23·5	·6397946
27	23 13 43·58	3 57 47·6	·8114641	22 50·2	215 27 53·1	1 22 5·7	·6436063
28	23 13 32·25	4 15 38·6	·8180488	22 46·4	218 30 55·3	0 59 56·3	·6471493
29	23 13 41·76	4 30 58·5	·8249818	22 42·9	221 31 4·1	0 37 57·6	·6504234
30	23 14 11·51	4 43 45·7	·8321953	22 39·8	224 28 36·1	0 16 11·7	·6534292
						South.	
31	23 15 0·78	4 54 0·1	·8396291	22 37·0	227 23 47·6	0 5 19·5	·6561675
Apr. 1	23 16 8·80	5 1 43·2	·8472304	22 34·5	230 16 53·9	0 26 34·6	·6586390
2	23 17 34·71	5 6 57·6	·8549531	22 32·3	233 8 9·9	0 47 32·1	·6608447
3	23 19 17·58	5 9 45·8	·8627578	22 30·3	235 57 49·9	1 8 10·6	·6627856
4	23 21 16·54	5 10 12·3	·8706107	22 28·6	238 46 7·7	1 28 29·0	·6644629
5	23 23 30·69	5 8 20·9	·8784826	22 27·1	241 33 17·0	1 48 26·2	·6658774
6	23 25 59·21	5 4 15·7	·8863501	22 25·8	244 19 30·7	2 8 1·1	·6670297
7	23 28 41·27	4 58 0·8	·8941921	22 24·7	247 5 1·9	2 27 12·6	·6679208
8	23 31 36·07	4 49 40·9	·9019929	22 23·9	249 50 3·0	2 45 59·9	·6685511
9	23 34 42·88	4 39 20·1	·9097386	22 23·3	252 34 46·5	3 4 21·6	·6689212
10	23 38 1·01	4 27 2·7	·9174178	22 22·8	255 19 24·6	3 22 16·8	·6690312
11	23 41 29·84	4 12 52·6	·9250222	22 22·5	258 4 9·6	3 39 44·4	·6688812
12	23 45 8·78	3 56 53·9	·9325446	22 22·4	260 49 13·7	3 56 43·0	·6684712
13	23 48 57·27	3 39 10·4	·9399796	22 22·4	263 34 49·3	4 13 11·4	·6678009
14	23 52 54·88	3 19 45·5	·9473231	22 22·5	266 21 8·4	4 29 8·1	·6668697
15	23 57 1·15	2 58 42·9	·9545709	22 22·8	269 8 23·6	4 44 31·5	·6656771
16	0 1 15·72	2 36 5·8	·9617212	22 23·2	271 56 47·5	4 59 20·0	·6642223
17	0 5 38·17	2 11 57·4	·9687724	22 23·8	274 46 32·9	5 13 31·6	·6625045
18	0 10 8·29	1 46 20·9	·9757230	22 24·5	277 37 53·1	5 27 4·2	·6605231
19	0 14 45·80	1 19 18·9	·9825714	22 25·3	280 31 1·4	5 39 55·7	·6582766
20	0 19 30·50	0 50 54·5	·9893175	22 26·2	283 26 11·9	5 52 3·3	·6557642
21	0 24 22·23	0 21 10·5	·9959595	22 27·2	286 23 38·6	6 3 24·3	·6529848
		North.	0				
22	0 29 20·76	0 9 50·7	·0024975	22 28·3	289 23 36·4	6 13 55·7	·6499377
23	0 34 26·10	0 42 6·4	·0089297	22 29·5	292 26 20·5	6 23 34·0	·6466223
24	0 39 38·17	1 15 34·0	·0152550	22 30·9	295 32 7·0	6 32 15·5	·6430381
25	0 44 56·89	1 50 11·0	·0214719	22 32·4	298 41 12·0	6 39 56·0	·6391853
26	0 50 22·29	2 25 54·8	·0275783	22 34·0	301 53 53·1	6 46 31·1	·6350641
27	0 55 54·42	3 2 43·1	·0335719	22 35·7	305 10 27·8	6 51 55·8	·6306758
28	1 1 33·32	3 40 33·0	·0394497	22 37·5	308 31 14·6	6 56 4·8	·6260226
29	1 7 19·09	4 19 22·2	·0452077	22 39·4	311 56 32·9	6 58 52·1	·6211078
30	1 13 11·84	4 59 7·7	·0508417	22 41·5	315 26 42·5	7 0 11·5	·6159356

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	h m s	North. ° ′ ″	°	h m	° ′ ″	South. ° ′ ″	9
Apr. 30	1 13 11·84	4 59 7·7	·0508417	22 41·5	315 26 42·5	7 0 11·5	·6159356
May 1	1 19 11·73	5 39 47·0	·0563464	22 43·7	319 2 4·2	6 59 56·1	·6105122
2	1 25 18·90	6 21 16·7	·0617159	22 46·0	322 42 59·1	6 57 58·5	·6048459
3	1 31 33·59	7 3 34·2	·0669433	22 48·4	326 29 49·1	6 54 11·2	·5989469
4	1 37 55·98	7 46 35·8	·0720204	22 51·0	330 22 56·3	6 48 25·8	·5928285
5	1 44 26·28	8 30 17·8	·0769379	22 53·7	334 22 43·1	6 40 34·0	·5865074
6	1 51 4·76	9 14 36·5	·0816858	22 56·5	338 29 32·4	6 30 27·1	·5800037
7	1 57 51·67	9 59 27·5	·0862515	22 59·5	342 43 46·1	6 17 56·3	·5733423
8	2 4 47·25	10 44 45·9	·0906226	23 2·6	347 5 46·2	6 2 53·3	·5665530
9	2 11 51·78	11 30 26·6	·0947838	23 5·9	351 35 52·7	5 45 10·0	·5596715
10	2 19 5·47	12 16 23·8	·0987192	23 9·4	356 14 24·7	5 24 39·3	·5527391
11	2 26 28·56	13 2 31·3	·1024115	23 13·0	1 1 38·3	5 1 15·7	·5458047
12	2 34 1·23	13 48 41·7	·1058414	23 16·8	5 57 47·0	4 34 55·4	·5389232
13	2 41 43·62	14 34 47·5	·1089887	23 20·7	11 2 59·4	4 5 37·1	·5321583
14	2 49 35·83	15 20 39·9	·1118322	23 24·8	16 17 19·7	3 33 23·1	·5255796
15	2 57 37·84	16 6 9·7	·1143492	23 29·0	21 40 45·3	2 58 19·5	·5192639
16	3 5 49·56	16 51 6·7	·1165175	23 33·4	27 13 6·4	2 20 37·2	·5132934
17	3 14 10·81	17 35 20·1	·1183137	23 38·0	32 54 4·7	1 40 32·4	·5077546
18	3 22 41·23	18 18 38·2	·1197158	23 42·7	38 43 12·6	0 58 27·2	·5027350
19	3 31 20·38	19 0 49·1	·1207030	23 47·6	44 39 52·2	0 14 49·3	·4983216
						North.	
20	3 40 7·64	19 41 40·6	·1212558	23 52·6	50 43 14·5	0 29 47·8	·4945960
21	3 49 2·21	20 20 59·9	·1213575	23 57·7	56 52 20·7	1 14 45·9	·4916334
22	3 58 3·18	20 58 34·9	·1209956	* *	63 6 1·9	1 59 23·3	·4894941
23	4 7 9·51	21 34 13·8	·1201600	0 2·9	69 23 0·1	2 42 56·1	·4882252
24	4 16 19·97	22 7 45·3	·1188461	0 8·1	75 41 50·5	3 24 40·7	·4878550
25	4 25 33·29	22 38 59·6	·1170533	0 13·4	82 1 4·2	4 3 55·6	·4883917
26	4 34 48·08	23 7 48·1	·1147867	0 18·7	88 19 9·9	4 40 3·5	·4898234
27	4 44 2·97	23 34 3·6	·1120539	0 24·1	94 34 38·3	5 12 33·0	·4921179
28	4 53 16·54	23 57 40·5	·1088689	0 29·4	100 46 3·5	5 40 59·9	·4952264
29	5 2 27·40	24 18 35·3	·1052477	0 34·6	106 52 6·9	6 5 8·0	·4990839
30	5 11 34·23	24 36 46·1	·1012105	0 39·8	112 51 38·8	6 24 48·8	·5036152
31	5 20 35·76	24 52 12·4	·0967781	0 44·9	118 43 39·8	6 40 1·4	·5087365
June 1	5 29 30·85	25 4 55·4	·0919744	0 49·9	124 27 22·2	6 50 51·4	·5143616
2	5 38 18·44	25 14 57·7	·0868227	0 54·7	130 2 9·8	6 57 29·7	·5204018
3	5 46 57·59	25 22 23·0	·0813470	0 59·4	135 27 37·4	7 0 11·6	·5267718
4	5 55 27·44	25 27 15·9	·0755713	1 4·0	140 43 30·3	6 59 14·9	·5333902
5	6 3 47·26	25 29 41·9	·0695187	1 8·4	145 49 42·9	6 54 59·3	·5401815
6	6 11 56·44	25 29 46·9	·0632107	1 12·6	150 46 18·0	6 47 45·2	·5470771
7	6 19 54·42	25 27 37·6	·0566678	1 16·6	155 33 24·6	6 37 52·9	·5540151
8	6 27 40·73	25 23 21·0	·0499097	1 20·5	160 11 17·1	6 25 42·0	·5609414
9	6 35 15·00	25 17 4·0	·0429539	1 24·1	164 40 14·1	6 11 31·1	·5678088
10	6 42 36·89	25 8 53·6	·0358174	1 27·5	169 0 37·2	5 55 37·6	·5745769

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	h m s	North. ° ′ ″	0	h m	° ′ ″	North. ° ′ ″	9
June 10	6 42 36·89	25 8 53·6	·0358174	1 27·5	169 0 37·2	5 55 37·6	·5745769
11	6 49 46·11	24 58 57·2	·0285153	1 30·7	173 12 50·3	5 38 17·0	·5812113
12	6 56 42·43	24 47 22·1	·0210608	1 33·7	177 17 18·1	5 19 43·8	·5876829
13	7 3 25·64	24 34 15·3	·0134673	1 36·5	181 14 26·6	5 0 10·5	·5939682
14	7 9 55·56	24 19 43·9	·0057465	1 39·0	185 4 41·5	4 39 48·6	·6000473
15	7 16 12·03	24 3 55·0	9 ·9979089	1 41·3	188 48 28·6	4 18 47·9	·6059043
16	7 22 14·90	23 46 55·3	·9899644	1 43·4	192 26 13·4	3 57 17·1	·6115267
17	7 28 4·02	23 28 51·6	·9819228	1 45·3	195 58 19·9	3 35 23·8	·6169044
18	7 33 39·23	23 9 50·4	·9737930	1 46·9	199 25 12·5	3 13 14·6	·6220299
19	7 39 0·41	22 49 58·5	·9655835	1 48·3	202 47 13·8	2 50 55·1	·6268967
20	7 44 7·37	22 29 22·1	·9573030	1 49·5	206 4 46·0	2 28 30·4	·6315014
21	7 48 59·98	22 8 7·5	·9489598	1 50·4	209 18 9·9	2 6 4·5	·6358407
22	7 53 38·01	21 46 21·2	·9405623	1 51·1	212 27 45·9	1 43 41·2	·6399125
23	7 58 1·31	21 24 9·4	·9321195	1 51·5	215 33 53·2	1 21 23·6	·6437163
24	8 2 9·63	21 1 38·3	·9236419	1 51·7	218 36 49·7	0 59 14·5	·6472510
25	8 6 2·75	20 38 53·9	·9151385	1 51·6	221 36 53·4	0 37 16·2	·6505172
26	8 9 40·40	20 16 2·5	·9066204	1 51·3	224 34 20·9	0 15 30·8	·6535149
27	8 13 2·31	19 53 10·3	·8981006	1 50·7	227 29 28·1	South. 0 6 0·0	·6562452
28	8 16 8·18	19 30 23·6	·8895914	1 49·8	230 22 31·1	0 27 14·6	·6587087
29	8 18 57·71	19 7 48·7	·8811086	1 48·6	233 13 44·0	0 48 11·4	·6609066
30	8 21 30·55	18 45 31·8	·8726691	1 47·2	236 3 21·4	1 8 49·4	·6628394
July 1	8 23 46·38	18 23 39·6	·8642922	1 45·5	238 51 36·9	1 29 7·1	·6645088
2	8 25 44·83	18 2 18·4	·8559983	1 43·6	241 38 44·4	1 49 3·6	·6659156
3	8 27 25·59	17 41 34·9	·8478121	1 41·3	244 24 56·8	2 8 37·8	·6670601
4	8 28 48·30	17 21 35·9	·8397607	1 38·7	247 10 26·9	2 27 48·7	·6679434
5	8 29 52·66	17 2 27·8	·8318740	1 35·8	249 55 27·5	2 46 35·1	·6685660
6	8 30 38·42	16 44 17·5	·8241860	1 32·6	252 40 10·6	3 4 56·0	·6689283
7	8 31 5·36	16 27 11·8	·8167335	1 29·1	255 24 48·9	3 22 50·4	·6690306
8	8 31 13·34	16 11 17·0	·8095581	1 25·3	258 9 34·4	3 40 17·1	·6688729
9	8 31 2·33	15 56 39·9	·8027046	1 21·2	260 54 39·4	3 57 14·8	·6684551
10	8 30 32·40	15 43 26·4	·7962210	1 16·7	263 40 16·0	4 13 42·1	·6677770
11	8 29 43·81	15 31 42·6	·7901604	1 11·9	266 26 36·7	4 29 37·8	·6668381
12	8 28 36·94	15 21 33·8	·7845767	1 6·9	269 13 54·0	4 45 0·2	·6656376
13	8 27 12·43	15 13 5·0	·7795287	1 1·6	272 2 20·3	4 59 47·5	·6641750
14	8 25 31·13	15 6 19·9	·7750751	0 56·0	274 52 8·6	5 13 57·9	·6624494
15	8 23 34·15	15 1 21·9	·7712755	0 50·1	277 43 32·0	5 27 29·3	·6604600
16	8 21 22·87	14 58 12·9	·7681901	0 44·0	280 36 44·0	5 40 19·3	·6582056
17	8 18 58·95	14 56 54·0	·7658745	0 37·6	283 31 58·5	5 52 25·5	·6556852
18	8 16 24·34	14 57 24·9	·7643822	0 31·1	286 29 29·8	6 3 45·1	·6528977
19	8 13 41·27	14 59 44·0	·7637598	0 24·5	289 29 32·7	6 14 14·8	·6498427
20	8 10 52·23	15 3 48·0	·7640474	0 17·8	292 32 22·2	6 23 51·4	·6465194

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	h m s	North. ° ′ ″	9	h m	° ′ ″	South. ° ′ ″	9
July 20	8 10 52·23	15 3 48·0	·7640474	0 17·8	292 32 22·2	6 23 51·4	·6465194
21	8 7 59·86	15 9 33·1	·7652758	0 11·0	295 38 14·7	6 32 31·0	·6429268
22	8 5 7·07	15 16 52·8	·7674654	{0 5 5·3}	298 47 26·3	6 40 9·5	·6390658
23	8 2 16·80	15 25 40·9	·7706258	23 50·8	302 0 14·4	6 46 42·5	·6349365
24	7 59 32·10	15 35 49·0	·7747541	23 44·3	305 16 56·7	6 52 4·9	·6305401
25	7 56 55·94	15 47 8·3	·7798357	23 38·0	308 37 51·7	6 56 11·4	·6258790
26	7 54 31·27	15 59 29·0	·7858439	23 31·9	312 3 18·7	6 58 56·0	·6209562
27	7 52 20·86	16 12 41·0	·7927427	23 26·1	315 33 37·8	7 0 12·5	·6157762
28	7 50 27·32	16 26 33·6	·8004847	23 20·6	319 9 9·4	6 59 54·0	·6103452
29	7 48 53·00	16 40 55·9	·8090151	23 15·4	322 50 14·8	6 57 53·2	·6046718
30	7 47 40·00	16 55 36·8	·8182729	23 10·6	326 37 16·2	6 54 2·2	·5987656
31	7 46 50·16	17 10 25·1	·8281904	23 6·3	330 30 35·3	6 48 13·0	·5926408
Aug. 1	7 46 25·02	17 25 9·6	·8386976	23 2·4	334 30 34·8	6 40 17·1	·5863137
2	7 46 25·85	17 39 39·1	·8497222	22 58·9	338 37 37·4	6 30 5·8	·5798048
3	7 46 53·62	17 53 42·6	·8611907	22 55·9	342 52 5·1	6 17 30·4	·5731390
4	7 47 49·09	18 7 8·8	·8730297	22 53·3	347 14 19·6	6 2 22·5	·5663462
5	7 49 12·72	18 19 46·7	·8851661	22 51·2	351 44 41·5	5 44 34·0	·5594624
6	7 51 4·78	18 31 25·4	·8975289	22 49·6	356 23 29·1	5 23 58·1	·5525292
7	7 53 25·31	18 41 52·8	·9100485	22 48·4	1 10 59·0	5 0 29·0	·5455953
8	7 56 14·17	18 50 58·6	·9226564	22 47·7	6 7 24·0	4 34 3·1	·5387163
9	7 59 31·00	18 58 31·6	·9352875	22 47·5	11 12 53·2	4 4 39·4	·5319559
10	8 3 15·27	19 4 20·8	·9478776	22 47·7	16 27 30·2	3 32 20·0	·5253838
11	8 7 26·25	19 8 15·5	·9603653	22 48·3	21 51 12·3	2 57 11·3	·5190773
12	8 12 3·03	19 10 5·2	·9726914	22 49·4	27 23 49·7	2 19 24·3	·5131186
13	8 17 4·52	19 9 40·4	·9847983	22 50·9	33 5 3·2	1 39 15·5	·5075940
14	8 22 29·45	19 6 52·1	·9966328	22 52·7	38 54 25·6	0 57 6·9	·5025918
15	8 28 16·38	19 1 32·3	0·0081431	22 54·8	44 51 18·0	0 13 26·7 North.	·4981979
16	8 34 23·65	18 53 34·3	·0192822	22 57·3	50 54 51·8	0 31 11·7	·4944947
17	8 40 49·50	18 42 52·9	·0300072	23 0·1	57 4 7·6	1 16 9·8	·4915559
18	8 47 32·00	18 29 24·7	·0402794	23 3·1	63 17 55·6	2 0 45·7	·4894424
19	8 54 29·13	18 13 8·1	·0500668	23 6·3	69 34 58·4	2 44 15·9	·4882008
20	9 1 38·79	17 54 3·4	·0593425	23 9·7	75 53 50·6	3 25 56·4	·4878579
21	9 8 58·85	17 32 12·9	·0680867	23 13·3	82 13 3·2	4 5 6·0	·4884223
22	9 16 27·25	17 7 41·0	·0762861	23 16·9	88 31 5·2	4 41 7·5	·4898807
23	9 24 1·93	16 40 33·9	·0839339	23 20·6	94 46 27·1	5 13 29·8	·4922013
24	9 31 40·97	16 10 58·9	·0910294	23 24·4	100 57 43·2	5 41 48·9	·4953333
25	9 39 22·59	15 39 5·0	·0975783	23 28·1	107 3 35·4	6 5 48·7	·4992127
26	9 47 5·16	15 5 2·0	·1035905	23 31·9	113 2 54·2	6 25 21·2	·5037631
27	9 54 47·26	14 29 0·3	·1090810	23 35·7	118 54 40·3	6 40 25·5	·5089014
28	10 2 27·62	13 51 10·7	·1140682	23 39·4	124 38 6·6	6 51 7·5	·5145403
29	10 10 5·21	13 11 44·0	·1185727	23 43·0	130 12 37·1	6 57 38·3	·5205917

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	h m s	North. ° ′ ″	°	h m	° ′ ″	North. ° ′ ″	☿
Aug. 29	10 10 5·21	13 11 44·0	·1185727	23 43·0	130 12 37·1	6 57 38·3	·5205917
30	10 17 39·15	12 30 51·1	·1226167	23 46·5	135 37 46·9	7 0 13·1	·5269708
31	10 25 8·74	11 48 42·1	·1262236	23 50·0	140 53 21·9	6 59 9·9	·5335954
Sept. 1	10 32 33·44	11 5 27·1	·1294174	23 53·4	145 59 16·4	6 54 48·5	·5403908
2	10 39 52·88	10 21 15·3	·1322216	23 56·7	150 55 33·7	6 47 29·1	·5472885
3	10 47 6·74	9 36 15·8	·1346591	23 59·9	155 42 22·8	6 37 32·2	·5542269
4	10 54 14·89	8 50 36·4	·1367519	* *	160 19 58·3	6 25 17·3	·5611522
5	11 1 17·20	8 4 24·7	·1385212	0 3·0	164 48 39·0	6 11 3·0	·5680169
6	11 8 13·70	7 17 47·4	·1399865	0 6·0	169 8 46·5	5 55 6·5	·5747816
7	11 15 4·44	6 30 50·7	·1411660	0 8·9	173 20 44·8	5 37 43·5	·5814113
8	11 21 49·49	5 43 40·5	·1420764	0 11·7	177 24 58·4	5 19 8·2	·5878776
9	11 28 29·01	4 56 21·5	·1427341	0 14·4	181 21 53·7	4 59 33·3	·5941569
10	11 35 3·15	4 8 58·8	·1431523	0 17·0	185 11 56·1	4 39 10·0	·6002294
11	11 41 32·11	3 21 36·3	·1433439	0 19·6	188 55 31·6	4 18 8·2	·6060795
12	11 47 56·06	2 34 17·8	·1433206	0 22·1	192 33 5·2	3 56 36·6	·6116946
13	11 54 15·24	1 47 6·8	·1430928	0 24·5	196 5 1·7	3 34 42·7	·6170648
14	12 0 29·84	1 0 6·4	·1426689	0 26·8	199 31 44·9	3 12 33·1	·6221825
15	12 6 40·09	0 13 19·4	·1420576	0 29·0	202 53 37·5	2 50 13·4	·6270413
		South.					
16	12 12 46·21	0 33 11·6	·1412655	0 31·1	206 11 1·7	2 27 48·5	·6316378
17	12 18 48·41	1 19 24·3	·1402993	0 33·2	209 24 18·3	2 5 22·6	·6359689
18	12 24 46·88	2 5 16·5	·1391631	0 35·3	212 33 47·5	1 42 59·4	·6400328
19	12 30 41·85	2 50 46·2	·1378622	0 37·3	215 39 48·4	1 20 42·1	·6438282
20	12 36 33·49	3 35 51·5	·1363994	0 39·2	218 42 39·5	0 58 33·3	·6473547
21	12 42 22·00	4 20 30·7	·1347778	0 41·1	221 42 38·0	0 36 35·3	·6506126
22	12 48 7·54	5 4 42·2	·1329997	0 42·9	224 40 1·0	0 14 50·3	·6536023
						South.	
23	12 53 50·30	5 48 24·4	·1310657	0 44·6	227 35 4·5	0 6 40·1	·6563244
24	12 59 30·39	6 31 35·7	·1289779	0 46·3	230 28 3·6	0 27 54·1	·6587798
25	13 5 7·99	7 14 14·8	·1267352	0 48·0	233 19 13·4	0 48 50·4	·6609697
26	13 10 43·21	7 56 20·2	·1243379	0 49·7	236 8 48·2	1 9 27·8	·6628944
27	13 16 16·16	8 37 50·6	·1217844	0 51·3	238 57 1·6	1 29 44·9	·6645557
28	13 21 46·95	9 18 44·7	·1190735	0 52·9	241 44 7·3	1 49 40·8	·6659544
29	13 27 15·64	9 59 1·0	·1162036	0 54·4	244 30 18·4	2 9 14·3	·6670911
30	13 32 42·30	10 38 38·0	·1131719	0 55·9	247 15 47·5	2 28 24·4	·6679662
Oct. 1	13 38 6·98	11 17 34·6	·1099750	0 57·4	250 0 47·4	2 47 10·0	·6685809
2	13 43 29·70	11 55 49·3	·1066101	0 58·8	252 45 30·3	3 5 30·2	·6689352
3	13 48 50·47	12 33 20·7	·1030728	1 0·2	255 30 8·7	3 23 23·7	·6690293
4	13 54 9·27	13 10 7·1	·0993591	1 1·6	258 14 54·7	3 40 49·5	·6688638
5	13 59 26·05	13 46 7·0	·0954635	1 2·9	261 0 0·6	3 57 46·3	·6684379
6	14 4 40·72	14 21 19·1	·0913814	1 4·2	263 45 38·5	4 14 12·7	·6677518
7	14 9 53·22	14 55 41·3	·0871065	1 5·5	266 32 0·9	4 30 7·4	·6668049
8	14 15 3·38	15 29 12·0	·0826329	1 6·7	269 19 20·1	4 45 28·7	·6655963
9	14 20 11·06	16 1 49·7	·0779543	1 7·9	272 7 48·7	5 0 14·9	·6641256

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	h m s	South. ° ′ ″	0	h m	° ′ ″	South. ° ′ ″	9
Oct. 9	14 20 11·06	16 1 49·7	·0779543	1 7·9	272 7 48·7	5 0 14·9	·6641256
10	14 25 16·02	16 33 31·8	·0730629	1 9·0	274 57 39·9	5 14 24·1	·6623919
11	14 30 18·03	17 4 16·7	·0679522	1 10·1	277 49 6·4	5 27 54·2	·6603943
12	14 35 16·77	17 34 2·1	·0626135	1 11·1	280 42 22·1	5 40 42·9	·6581316
13	14 40 11·89	18 2 45·5	·0570394	1 12·1	283 37 40·5	5 52 47·7	·6556031
14	14 45 2·97	18 30 24·5	·0512211	1 13·0	286 35 16·3	6 4 5·7	·6528072
15	14 49 49·54	18 56 56·5	·0451502	1 13·9	289 35 23·9	6 14 33·8	·6497438
16	14 54 31·01	19 22 18·2	·0388179	1 14·7	292 38 18·8	6 24 8·7	·6464119
17	14 59 6·78	19 46 26·8	·0322154	1 15·3	295 44 17·1	6 32 46·4	·6428114
18	15 3 36·07	20 9 18·8	·0253347	1 15·8	298 53 35·0	6 40 23·0	·6389423
19	15 7 58·05	20 30 50·3	·0181667	1 16·2	302 6 29·8	6 46 53·8	·6348046
20	15 12 11·78	20 50 57·3	·0107047	1 16·5	305 23 19·4	6 52 13·9	·6304000
21	15 16 16·15	21 9 35·1	·0029422 9	1 16·6	308 44 22·3	6 56 17·9	·6257307
22	15 20 9·93	21 26 39·0	·9948742	1 16·5	312 9 57·9	6 58 59·8	·6207998
23	15 23 51·74	21 42 3·2	·9864982	1 16·3	315 40 26·0	7 0 13·5	·6156118
24	15 27 20·03	21 55 41·9	·9778145	1 15·8	319 16 7·3	6 59 51·8	·6101732
25	15 30 33·09	22 7 28·1	·9688271	1 15·1	322 57 23·2	6 57 47·7	·6044923
26	15 33 28·98	22 17 14·3	·9595458	1 14·1	326 44 35·4	6 53 53·2	·5985793
27	15 36 5·61	22 24 51·9	·9499862	1 12·7	330 38 6·2	6 48. 0·2	·5924480
28	15 38 20·67	22 30 11·7	·9401727	1 11·0	334 38 18·2	6 40 0·2	·5861147
29	15 40 11·74	22 33 3·1	·9301404	1 8·9	338 45 34·0	6 29 44·5	·5796006
30	15 41 36·21	22 33 14·7	·9199379	1 6·4	343 0 15·4	6 17 4·5	·5729302
31	15 42 31·41	22 30 34·2	·9096293	1 3·3	347 22 44·3	6 1 51·7	·5661340
Nov. 1	15 42 54·73	22 24 48·1	·8992980	0 59·7	351 53 21·1	5 43 58·2	·5592479
2	15 42 43·66	22 15 42·6	·8890496	0 55·6	356 32 24·1	5 23 17·0	·5523138
3	15 41 56·04	22 3 4·4	·8790149	0 50·8	1 20 9·8	4 59 42·5	·5453807
4	15 40 30·19	21 46 40·9	·8693518	0 45·4	6 16 51·0	4 33 11·2	·5385044
5	15 38 25·28	21 26 22·3	·8602442	0 39·4	11 22 36·7	4 3 42·0	·5317488
6	15 35 41·57	21 2 3·2	·8519039	0 32·8	16 37 30·0	3 31 17·3	·5251837
7	15 32 20·67	20 33 44·9	·8445597	0 25·5	22 1 28·3	2 56 3·6	·5188869
8	15 28 25·91	20 1 38·2	·8384519	0 17·7	27 34 21·3	2 18 12·0	·5129402
9	15 24 2·37	19 26 5·5	·8338149	0 9·4	33 15 50·1	1 37 59·1	·5074305
10	15 19 16·88	18 47 42·5	·8308612	{0 0·8 23 51·9}	39 5 26·5	0 55 47·4	·5024459
11	15 14 17·88	18 7 18·7	·8297600	23 43·0	45 2 31·6	0 12 4·9	·4980720
12	15 9 14·89	17 25 55·7	·8306185	23 34·1	51 6 16·5	North. 0 32 34·6	·4943913
13	15 4 17·93	16 44 43·5	·8334693	23 25·5	57 15 41·2	1 17 32·6	·4914773
14	14 59 36·80	16 4 55·4	·8382629	23 17·3	63 29 36·4	2 2 7·2	·4893903
15	14 55 20·42	15 27 42·1	·8448721	23 9·7	69 46 43·6	2 45 34·6	·4881758
16	14 51 36·22	14 54 5·8	·8531039	23 2·7	76 5 37·7	3 27 11·1	·4878615
17	14 48 29·83	14 24 56·0	·8627190	22 56·3	82 24 49·2	4 6 15·4	·4884535
18	14 46 4·93	14 0 47·6	·8734518	22 50·7	88 42 47·3	4 42 10·6	·4899392
19	14 44 23·40	13 41 59·5	·8850315	22 45·8	94 58 2·6	5 14 25·7	·4922859
20	14 43 25·50	13 28 36·8	·8971998	22 41·5	101 9 9·7	5 42 37·0	·4954420

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Month and Day.	Geocentric. Apparent Right Ascension. Noon.	Geocentric. Apparent Declination. Noon.	Geocentric. Log. of True Dist. from the Earth. Noon.	Meridian Passage.	Heliocentric. Longitude. Noon.	Heliocentric. Latitude. Noon.	Heliocentric. Log. of Rad. Vect. Noon.
	h m s	South. ° ′ ″	9	h m	° ′ ″	North. ° ′ ″	9
Nov. 20	14 43 25·50	13 28 36·8	·8971998	22 41·5	101 9 9·7	5 42 37·0	·4954420
21	14 43 10·18	13 20 32·6	·9097203	22 38·0	107 14 50·5	6 6 28·7	·4993438
22	14 43 35·47	13 17 30·9	·9223889	22 35·1	113 13 56·0	6 25 52·9	·5039137
23	14 44 38·73	13 19 9·4	·9350328	22 32·7	119 5 27·1	6 40 49·1	·5090689
24	14 46 17·01	13 25 1·9	·9475151	22 30·9	124 48 37·4	6 51 23·2	·5147220
25	14 48 27·15	13 34 40·4	·9597279	22 29·6	130 22 50·7	6 57 46·5	·5207852
26	14 51 6·03	13 47 36·5	·9715909	22 28·7	135 47 42·9	7 0 14·3	·5271731
27	14 54 10·67	14 3 22·9	·9830470	22 28·2	141 2 59·8	6 59 4·8	·5338043
28	14 57 38·29	14 21 33·4	·9940581	22, 28·0	146 8 36·5	6 54 37·6	·5406041
			0				
29	15 1 26·30	14 41 44·1	·0046017	22 28·2	151 4 36·1	6 47 13·2	·5475041
30	15 5 32·40	15 3 33·0	·0146665	22 28·6	155 51 7·7	6 37 11·7	·5544430
Dec. 1	15 9 54·52	15 26 40·4	·0242511	22 29·2	160 28 26·7	6 24 53·0	·5613673
2	15 14 30·86	15 50 48·4	·0333601	22 30·1	164 56 51·2	6 10 35·3	·5682296
3	15 19 19·77	16 15 41·4	·0420041	22 31·2	169 16 43·4	5 54 35·9	·5749908
4	15 24 19·89	16 41 5·4	·0501957	22 32·4	173 28 26·9	5 37 10·5	·5816160
5	15 29 30·00	17 6 48·4	·0579509	22 33·7	177 32 27·0	5 18 33·2	·5880769
6	15 34 49·04	17 32 39·4	·0652865	22 35·2	181 29 9·2	4 58 56·7	·5943502
7	15 40 16·12	17 58 28·9	·0722204	22 36·8	185 18 59·5	4 38 32·1	·6004162
8	15 45 50·43	18 24 8·6	·0787702	22 38·6	189 2 23·8	4 17 29·3	·6062591
9	15 51 31·31	18 49 31·2	·0849534	22 40·4	192 39 46·8	3 55 56·9	·6118668
10	15 57 18·17	19 14 30·0	·0907875	22 42·4	196 11 33·5	3 34 2·4	·6172294
11	16 3 10·53	19 38 59·2	·0962886	22 44·4	199 38 7·5	3 11 52·4	·6223390
12	16 9 7·93	20 2 54·1	·1014724	22 46·5	202 59 51·8	2 49 32·5	·6271898
13	16 15 10·02	20 26 9·7	·1063535	22 48·6	206 17 8·3	2 27 7·5	·6317783
14	16 21 16·45	20 48 42·0	·1109465	22 50·8	209 30 17·8	2 4 41·7	·6361010
15	16 27 26·96	21 10 27·3	·1152640	22 53·1	212 39 40·3	1 42 18·6	·6401565
16	16 33 41·30	21 31 22·4	·1193186	22 55·5	215 45 35·7	1 20 1·4	·6439434
17	16 39 59·25	21 51 24·2	·1231209	22 57·9	218 48 21·7	0 57 52·9	·6474615
18	16 46 20·60	22 10 29·9	·1266816	23 0·4	221 48 15·6	0 35 55·3	·6507110
19	16 52 45·22	22 28 37·0	·1300109	23 2·9	224 45 34·3	0 14 10·6	·6536922
						South.	
20	16 59 12·93	22 45 43·0	·1331171	23 5·5	227 40 34·0	0 7 19·3	·6564059
21	17 5 43·60	23 1 45·9	·1360084	23 8·1	230 33 29·8	0 28 32·8	·6588528
22	17 12 17·08	23 16 43·6	·1386919	23 10·8	233 24 36·7	0 49 28·6	·6610342
23	17 18 53·28	23 30 34·1	·1411743	23 13·5	236 14 9·0	1 10 5·3	·6629508
24	17 25 32·07	23 43 15·7	·1434620	23 16·2	239 2 20·5	1 30 21·9	·6646039
25	17 32 13·34	23 54 46·5	·1455599	23 19·0	241 49 24·6	1 50 17·1	·6659940
26	17 38 56·99	24 5 5·2	·1474727	23 21·8	244 35 34·4	2 9 49·9	·6671224
27	17 45 42·93	24 14 9·8	·1492047	23 24·7	247 21 2·8	2 28 59·3	·6679892
28	17 52 31·04	24 21 59·3	·1507596	23 27·6	250 6 2·3	2 47 44·2	·6685954
29	17 59 21·22	24 28 31·9	·1521408	23 30·5	252 50 45·2	3 6 3·6	·6689417
30	18 6 13·37	24 33 46·3	·1533499	23 33·5	255 35 23·9	3 23 56·3	·6690278
31	18 13 7·41	24 37 41·4	·1543897	23 36·5	258 20 10·9	3 41 21·3	·6688538
32	18 20 3·21	24 40 15·8	·1552615	23 39·5	261 5 17·6	3 58 17·2	·6684197

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		South.				North.	
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
Jan. 1	16 32 14·65	20 28 47·7	·1277047	21 48·9	203 52 42·6	2 39 29·4	·8585072
2	16 37 26·76	20 41 45·2	·1294467	21 50·2	205 29 13·3	2 35 52·6	·8585869
3	16 42 39·87	20 54 8·2	·1311710	21 51·5	207 5 41·4	2 32 8·6	·8586672
4	16 47 53·96	21 5 56·0	·1328777	21 52·8	208 42 6·8	2 28 17·5	·8587480
5	16 53 8·99	21 17 8·0	·1345670	21 54·1	210 18 29·4	2 24 19·5	·8588292
6	16 58 24·92	21 27 43·7	·1362388	21 55·4	211 54 49·3	2 20 14·7	·8589107
7	17 3 41·70	21 37 42·5	·1378934	21 56·8	213 31 6·5	2 16 3·5	·8589926
8	17 8 59·30	21 47 3·9	·1395307	21 58·2	215 7 20·9	2 11 46·0	·8590747
9	17 14 17·67	21 55 47·5	·1411510	21 59·6	216 43 32·6	2 7 22·4	·8591569
10	17 19 36·75	22 3 52·9	·1427544	22 0·9	218 19 41·5	2 2 52·9	·8592393
11	17 24 56·51	22 11 19·5	·1443411	22 2·3	219 55 47·7	1 58 17·8	·8593217
12	17 30 16·89	22 18 7·1	·1459112	22 3·7	221 31 51·2	1 53 37·2	·8594041
13	17 35 37·84	22 24 15·2	·1474650	22 5·1	223 7 52·0	1 48 51·4	·8594864
14	17 40 59·31	22 29 43·5	·1490026	22 6·6	224 43 50·0	1 44 0·6	·8595685
15	17 46 21·24	22 34 31·8	·1505243	22 8·0	226 19 45·4	1 39 5·1	·8596504
16	17 51 43·58	22 38 39·7	·1520302	22 9·4	227 55 38·2	1 34 5·1	·8597320
17	17 57 6·27	22 42 7·0	·1535207	22 10·9	229 31 28·3	1 29 0·8	·8598133
18	18 2 29·26	22 44 53·5	·1549958	22 12·3	231 7 15·8	1 23 52·4	·8598942
19	18 7 52·49	22 46 59·0	·1564558	22 13·8	232 43 0·8	1 18 40·3	·8599746
20	18 13 15·91	22 48 23·4	·1579009	22 15·2	234 18 43·3	1 13 24·6	·8600545
21	18 18 39·46	22 49 6·6	·1593314	22 16·7	235 54 23·2	1 8 5·7	·8601338
22	18 24 3·09	22 49 8·4	·1607473	22 18·1	237 30 0·8	1 2 43·7	·8602125
23	18 29 26·73	22 48 28·8	·1621488	22 19·6	239 5 35·9	0 57 18·9	·8602905
24	18 34 50·34	22 47 7·8	·1635361	22 21·0	240 41 8·7	0 51 51·5	·8603677
25	18 40 13·85	22 45 5·3	·1649092	22 22·5	242 16 39·1	0 46 21·9	·8604440
26	18 45 37·21	22 42 21·4	·1662682	22 23·9	243 52 7·3	0 40 50·3	·8605195
27	18 51 0·37	22 38 56·2	·1676133	22 25·4	245 27 33·3	0 35 16·9	·8605940
28	18 56 23·27	22 34 49·7	·1689445	22 26·8	247 2 57·2	0 29 42·0	·8606675
29	19 1 45·86	22 30 2·2	·1702618	22 28·2	248 38 19·0	0 24 5·7	·8607399
30	19 7 8·09	22 24 33·6	·1715652	22 29·7	250 13 38·7	0 18 28·5	·8608112
31	19 12 29·91	22 18 24·2	·1728548	22 31·1	251 48 56·5	0 12 50·6	·8608813
Feb. 1	19 17 51·26	22 11 34·3	·1741306	22 32·5	253 24 12·4	0 7 12·1	·8609502
2	19 23 12·09	22 4 4·0	·1753925	22 33·9	254 59 26·4	0 1 33·5	·8610179
						South.	
3	19 28 32·34	21 55 53·7	·1766407	22 35·3	256 34 38·7	0 4 5·1	·8610842
4	19 33 51·98	21 47 3·6	·1778752	22 36·6	258 9 49·2	0 9 43·4	·8611491
5	19 39 10·95	21 37 34·2	·1790959	22 38·0	259 44 58·1	0 15 21·2	·8612126
6	19 44 29·20	21 27 25·9	·1803030	22 39·4	261 20 5·4	0 20 58·2	·8612747
7	19 49 46·69	21 16 38·9	·1814965	22 40·7	262 55 11·2	0 26 34·1	·8613352
8	19 55 3·37	21 5 13·8	·1826764	22 42·0	264 30 15·6	0 32. 8·7	·8613941
9	20 0 19·21	20 53 10·9	·1838428	22 43·3	266 5 18·7	0 37 41·7	·8614515
10	20 5 34·17	20 40 30·8	·1849958	22 44·6	267 40 20·4	0 43 12·9	·8615072
11	20 10 48·22	20 27 14·0	·1861356	22 45·9	269 15 21·0	0 48 42·1	·8615612

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Month and Day.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
		South.				*South.*	
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
Feb. 11	20 10 48·22	20 27 14·0	·1861356	22 45·9	269 15 21·0	0 48 42·1	·8615612
12	20 16 1·31	20 13 20·9	·1872622	22 47·2	270 50 20·4	0 54 8·9	·8616135
13	20 21 13·42	19 58 52·1	·1883758	22 48·4	272 25 18·8	0 59 33·2	·8616640
14	20 26 24·53	19 43 48·2	·1894765	22 49·6	274 0 16·2	1 4 54·7	·8617127
15	20 31 34·60	19 28 9·8	·1905644	22 50·8	275 35 12·7	1 10 13·2	·8617596
16	20 36 43·62	19 11 57·4	·1916397	22 52·0	277 10 8·4	1 15 28·4	·8618046
17	20 41 51·57	18 55 11·6	·1927026	22 53·2	278 45 3·3	1 20 40·1	·8618476
18	20 46 58·42	18 37 53·1	·1937531	22 54·4	280 19 57·4	1 25 48·0	·8618888
19	20 52 4·18	18 20 2·4	·1947913	22 55·5	281 54 51·0	1 30 51·9	·8619279
20	20 57 8·82	18 1 40·2	·1958174	22 56·6	283 29 44·0	1 35 51·6	·8619650
21	21 2 12·34	17 42 47·1	·1968314	22 57·7	285 4 36·5	1 40 46·9	·8620001
22	21 7 14·74	17 23 23·7	·1978335	22 58·8	286 39 28·5	1 45 37·6	·8620331
23	21 12 16·01	17 3 30·7	·1988237	22 59·9	288 14 20·2	1 50 23·4	·8620641
24	21 17 16·15	16 43 8·8	·1998021	23 0·9	289 49 11·6	1 55 4·1	·8620930
25	21 22 15·16	16 22 18·7	·2007687	23 1·9	291 24 2·8	1 59 39·6	·8621197
26	21 27 13·06	16 1 1·0	·2017236	23 2·9	292 58 53·8	2 4 9·5	·8621443
27	21 32 9·83	15 39 16·5	·2026666	23 3·9	294 33 44·7	2 8 33·7	·8621668
28	21 37 5·49	15 17 5·8	·2035978	23 4·9	296 8 35·6	2 12 52·0	·8621870
Mar. 1	21 42 0·06	14 54 29·6	·2045171	23 5·8	297 43 26·6	2 17 4·3	·8622051
2	21 46 53·55	14 31 28·6	·2054245	23 6·8	299 18 17·7	2 21 10·3	·8622210
3	21 51 45·96	14 8 3·5	·2063200	23 7·7	300 53 8·9	2 25 9·8	·8622346
4	21 56 37·31	13 44 15·1	·2072035	23 8·6	302 28 0·4	2 29 2·7	·8622461
5	22 1 27·61	13 20 4·1	·2080750	23 9·5	304 2 52·1	2 32 48·8	·8622553
6	22 6 16·88	12 55 31·3	·2089345	23 10·3	305 37 44·2	2 36 27·9	·8622622
7	22 11 5·14	12 30 37·4	·2097818	23 11·2	307 12 36·6	2 39 59·9	·8622669
8	22 15 52·41	12 5 23·1	·2106170	23 12·0	308 47 29·5	2 43 24·5	·8622694
9	22 20 38·71	11 39 49·2	·2114400	23 12·8	310 22 22·9	2 46 41·7	·8622696
10	22 25 24·05	11 13 56·4	·2122508	23 13·6	311 57 16·7	2 49 51·3	·8622675
11	22 30 8·47	10 47 45·5	·2130494	23 14·4	313 32 11·2	2 52 53·2	·8622632
12	22 34 51·99	10 21 17·2	·2138359	23 15·2	315 7 6·3	2 55 47·1	·8622567
13	22 39 34·62	9 54 32·3	·2146103	23 15·9	316 42 2·1	2 58 33·0	·8622479
14	22 44 16·41	9 27 31·6	·2153726	23 16·7	318 16 58·6	3 1 10·8	·8622369
15	22 48 57·38	9 0 15·8	·2161230	23 17·4	319 51 55·8	3 3 40·4	·8622236
16	22 53 37·55	8 32 45·6	·2168614	23 18·1	321 26 53·9	3 6 1·5	·8622081
17	22 58 16·96	8 5 1·7	·2175879	23 18·8	323 1 52·9	3 8 14·1	·8621904
18	23 2 55·65	7 37 4·8	·2183026	23 19·5	324 36 52·7	3 10 18·2	·8621705
19	23 7 33·65	7 8 55·8	·2190056	23 20·2	326 11 53·4	3 12 13·5	·8621484
20	23 12 10·98	6 40 35·2	·2196969	23 20·8	327 46 55·2	3 14 0·1	·8621242
21	23 16 47·69	6 12 3·9	·2203767	23 21·5	329 21 57·9	3 15 37·8	·8620978
22	23 21 23·82	5 43 22·5	·2210449	23 22·1	330 57 1·6	3 17 6·6	·8620693
23	23 25 59·40	5 14 31·8	·2217016	23 22·8	332 32 6·4	3 18 26·3	·8620387
24	23 30 34·47	4 45 32·4	·2223468	23 23·4	334 7 12·2	3 19 37·0	·8620060

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Month and Day.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*South.* ° ′ ″	0	h m	° ′ ″	*South.* ° ′ ″	9
Mar. 24	23 30 34·47	4 45 32·4	·2223468	23 23·4	334 7 12·2	3 19 37·0	·8620060
25	23 35 9·08	4 16 25·1	·2229804	23 24·0	335 42 19·1	3 20 38·5	·8619713
26	23 39 43·26	3 47 10·6	·2236025	23 24·7	337 17 27·2	3 21 30·9	·8619345
27	23 44 17·05	3 17 49·6	·2242130	23 25·3	338 52 36·4	3 22 14·0	·8618958
28	23 48 50·50	2 48 22·7	·2248119	23 25·9	340 27 46·8	3 22 47·9	·8618551
29	23 53 23·65	2 18 50·7	·2253992	23 26·5	342 2 58·4	3 23 12·4	·8618124
30	23 57 56·53	1 49 14·2	·2259747	23 27·1	343 38 11·2	3 23 27·7	·8617678
31	0 2 29·20	1 19 34·0	·2265384	23 27·7	345 13 25·2	3 23 33·6	·8617213
Apr. 1	0 7 1·68	0 49 50·9	·2270901	23 28·3	346 48 40·4	3 23 30·1	·8616729
2	0 11 34·03	0 20 5·5	·2276298	23 28·9	348 23 56·9	3 23 17·3	·8616227
		North.					
3	0 16 6·29	0 9 41·5	·2281573	23 29·5	349 59 14·7	3 22 55·1	·8615708
4	0 20 38·50	0 39 29·4	·2286726	23 30·1	351 34 33·9	3 22 23·6	·8615171
5	0 25 10·69	1 9 17·4	·2291756	23 30·7	353 9 54·3	3 21 42·8	·8614617
6	0 29 42·90	1 39 4·9	·2296662	23 31·3	354 45 16·1	3 20 52·7	·8614046
7	0 34 15·18	2 8 51·0	·2301443	23 31·9	356 20 39·2	3 19 53·3	·8613460
8	0 38 47·56	2 38 35·2	·2306099	23 32·5	357 56 3·7	3 18 44·6	·8612857
9	0 43 20·09	3 8 16·5	·2310628	23 33·1	359 31 29·5	3 17 26·8	·8612240
10	0 47 52·80	3 37 54·3	·2315030	23 33·7	1 6 56·7	3 15 59·9	·8611608
11	0 52 25·74	4 7 27·9	·2319306	23 34·3	2 42 25·4	3 14 23·8	·8610962
12	0 56 58·94	4 36 56·5	·2323454	23 34·9	4 17 55·4	3 12 38·8	·8610301
13	1 1 32·43	5 6 19·4	·2327475	23 35·5	5 53 26·8	3 10 44·8	·8609628
14	1 6 6·26	5 35 36·0	·2331369	23 36·2	7 28 59·7	3 8 42·0	·8608942
15	1 10 40·46	6 4 45·4	·2335136	23 36·8	9 4 34·0	3 6 30·4	·8608243
16	1 15 15·08	6 33 47·1	·2338776	23 37·4	10 40 9·8	3 4 10·1	·8607533
17	1 19 50·15	7 2 40·2	·2342290	23 38·1	12 15 47·0	3 1 41·2	·8606811
18	1 24 25·71	7 31 24·0	·2345678	23 38·8	13 51 25·7	2 59 3·9	·8606079
19	1 29 1·81	7 59 57·9	·2348939	23 39·4	15 27 5·8	2 56 18·2	·8605336
20	1 33 38·47	8 28 21·1	·2352075	23 40·1	17 2 47·5	2 53 24·3	·8604584
21	1 38 15·73	8 56 32·9	·2355084	23 40·8	18 38 30·6	2 50 22·2	·8603823
22	1 42 53·63	9 24 32·6	·2357967	23 41·5	20 14 15·3	2 47 12·2	·8603053
23	1 47 32·21	9 52 19·4	·2360723	23 42·2	21 50 1·5	2 43 54·4	·8602276
24	1 52 11·50	10 19 52·6	·2363353	23 42·9	23 25 49·2	2 40 28·8	·8601491
25	1 56 51·54	10 47 11·6	·2365855	23 43·7	25 1 38·4	2 36 55·7	·8600700
26	2 1 32·37	11 14 15·6	·2368231	23 44·4	26 37 29·2	2 33 15·2	·8599903
27	2 6 14·01	11 41 3·9	·2370478	23 45·2	28 13 21·6	2 29 27·5	·8599100
28	2 10 56·51	12 7 35·7	·2372596	23 46·0	29 49 15·5	2 25 32·7	·8598292
29	2 15 39·89	12 33 50·3	·2374584	23 46·8	31 25 11·1	2 21 31·0	·8597480
30	2 20 24·18	12 59 47·0	·2376441	23 47·6	33 1 8·2	2 17 22·7	·8596665
May 1	2 25 9·41	13 25 25·0	·2378165	23 48·4	34 37 6·9	2 13 7·9	·8595847
2	2 29 55·60	13 50 43·6	·2379755	23 49·2	36 13 7·3	2 8 46·7	·8595026
3	2 34 42·78	14 15 42·0	·2381211	23 50·1	37 49 9·3	2 4 19·5	·8594204
4	2 39 30·97	14 40 19·5	·2382531	23 51·0	39 25 13·0	1 59 46·3	·8593381

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	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*North.* ° ′ ″	○	h m	° ′ ″	*South.* ° ′ ″	♀
May 4	2 39 30·97	14 40 19·5	·2382531	23 51·0	39 25 13·0	1 59 46·3	·8593381
5	2 44 20·20	15 4 35·4	·2383714	23 51·9	41 1 18·3	1 55 7·3	·8592558
6	2 49 10·47	15 28 28·9	·2384758	23 52·8	42 37 25·3	1 50 22·9	·8591735
7	2 54 1·81	15 51 59·2	·2385663	23 53·7	44 13 34·0	1 45 33·2	·8590913
8	2 58 54·23	16 15 5·6	·2386427	23 54·7	45 49 44·4	1 40 38·4	·8590093
9	3 3 47·74	16 37 47·3	·2387049	23 55·7	47 25 56·4	1 35 38·8	·8589275
10	3 8 42·35	17 0 3·7	·2387530	23 56·6	49 2 10·2	1 30 34·6	·8588460
11	3 13 38·07	17 21 53·9	·2387869	23 57·6	50 38 25·6	1 25 26·1	·8587648
12	3 18 34·91	17 43 17·3	·2388065	23 58·6	52 14 42·7	1 20 13·4	·8586840
13	3 23 32·87	18 4 13·1	·2388119	23 59·7	53 51 1·6	1 14 56·8	·8586038
14	3 28 31·95	18 24 40·6	·2388029	* *	55 27 22·2	1 9 36·5	·8585240
15	3 33 32·15	18 44 39·2	·2387797	0 0·8	57 3 44·5	1 4 12·9	·8584449
16	3 38 33·46	19 4 8·0	·2387422	0 1·8	58 40 8·6	0 58 46·1	·8583664
17	3 43 35·89	19 23 6·3	·2386903	0 2·9	60 16 34·5	0 53 16·4	·8582887
18	3 48 39·43	19 41 33·6	·2386242	0 4·1	61 53 2·1	0 47 44·1	·8582117
19	3 53 44·07	19 59 29·2	·2385439	0 5·2	63 29 31·5	0 42 9·5	·8581356
20	3 58 49·81	20 16 52·4	·2384493	0 6·4	65 6 2·7	0 36 32·7	·8580604
21	4 3 56·62	20 33 42·6	·2383405	0 7·5	66 42 35·8	0 30 54·0	·8579861
22	4 9 4·51	20 49 59·1	·2382175	0 8·7	68 19 10·6	0 25 13·8	·8579129
23	4 14 13·44	21 5 41·3	·2380802	0 9·9	69 55 47·3	0 19 32·2	·8578408
24	4 19 23·41	21 20 48·6	·2379287	0 11·1	71 32 25·7	0 13 49·7	·8577698
25	4 24 34·39	21 35 20·3	·2377629	0 12·4	73 9 6·0	0 8 6·3	·8577001
26	4 29 46·36	21 49 16·0	·2375828	0 13·6	74 45 48·1	0 2 22·5	·8576316
						North.	
27	4 34 59·29	22 2 35·0	·2373883	0 14·9	76 22 31·9	0 3 21·5	·8575644
28	4 40 13·15	22 15 16·8	·2371793	0 16·2	77 59 17·6	0 9 5·5	·8574987
29	4 45 27·92	22 27 20·9	·2369557	0 17·5	79 36 5·0	0 14 49·2	·8574344
30	4 50 43·56	22 38 46·7	·2367174	0 18·8	81 12 54·2	0 20 32·3	·8573716
31	4 56 0·03	22 49 33·7	·2364643	0 20·1	82 49 45·2	0 26 14·4	·8573103
June 1	5 1 17·30	22 59 41·5	·2361963	0 21·5	84 26 38·0	0 31 55·5	·8572506
2	5 6 35·32	23 9. 9·6	·2359133	0 22·9	86 3 32·5	0 37 35·1	·8571926
3	5 11 54·05	23 17 57·7	·2356151	0 24·2	87 40 28·8	0 43 12·9	·8571362
4	5 17 13·43	23 26 5·3	·2353017	0 25·6	89 17 26·8	0 48 48·8	·8570816
5	5 22 33·43	23 33 32·0	·2349730	0 27·0	90 54 26·5	0 54 22·5	·8570287
6	5 27 53·98	23 40 17·4	·2346288	0 28·4	92 31 27·9	0 59 53·7	·8569777
7	5 33 15·03	23 46 21·4	·2342691	0 29·8	94 8 31·0	1 5 22·0	·8569285
8	5 38 36·53	23 51 43·5	·2338939	0 31·3	95 45 35·7	1 10 47·3	·8568812
9	5 43 58·42	23 56 23·6	·2335030	0 32·7	97 22 42·0	1 16 9·3	·8568358
10	5 49 20·64	24 0 21·3	·2330964	0 34·1	98 59 50·0	1 21 27·7	·8567924
11	5 54 43·12	24 3 36·5	·2326742	0 35·5	100 36 59·5	1 26 42·3	·8567510
12	6 0 5·82	24 6 9·1	·2322362	0 37·0	102 14 10·5	1 31 52·8	·8567116
13	6 5 28·67	24 7 58·9	·2317825	0 38·4	103 51 23·1	1 36 58·9	·8566743
14	6 10 51·60	24 9 5·8	·2313132	0 39·8	105 28 37·1	1 42 0·5	·8566391

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	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*North.* ° ′ ″	○	h m	° ′ ″	*North.* ° ′ ″	♀
June 14	6 10 51·60	24 9 5·8	·2313132	0 39·8	105 28 37·1	1 42 0·5	·8566391
15	6 16 14·55	24 9 29·7	·2308282	0 41·3	107 5 52·5	1 46 57·1	·8566061
16	6 21 37·47	24 9 10·7	·2303277	0 42·7	108 43 9·3	1 51 48·7	·8565752
17	6 27 0·29	24 8 8·7	·2298115	0 44·2	110 20 27·5	1 56 35·0	·8565465
18	6 32 22·95	24 6 23·7	·2292799	0 45·6	111 57 46·9	2 1 15·7	·8565200
19	6 37 45·40	24 3 55·9	·2287327	0 47·0	113 35 7·5	2 5 50·6	·8564958
20	6 43 7·56	24 0 45·2	·2281702	0 48·5	115 12 29·4	2 10 19·5	·8564738
21	6 48 29·39	23 56 51·9	·2275922	0 49·9	116 49 52·4	2 14 42·2	·8564541
22	6 53 50·83	23 52 16·0	·2269989	0 51·3	118 27 16·5	2 18 58·4	·8564367
23	6 59 11·82	23 46 57·7	·2263901	0 52·7	120 4 41·5	2 23 7·9	·8564217
24	7 4 32·31	23 40 57·3	·2257660	0 54·1	121 42 7·6	2 27 10·5	·8564089
25	7 9 52·25	23 34 14·9	·2251264	0 55·5	123 19 34·5	2 31 6·1	·8563985
26	7 15 11·59	23 26 50·9	·2244713	0 56·9	124 57 2·2	2 34 54·4	·8563904
27	7 20 30·27	23 18 45·4	·2238007	0 58·2	126 34 30·7	2 38 35·3	·8563846
28	7 25 48·24	23 9 58·9	·2231145	0 59·6	128 11 59·9	2 42 8·5	·8563812
29	7 31 5·47	23 0 31·6	·2224127	1 1·0	129 49 29·7	2 45 33·9	·8563801
30	7 36 21·90	22 50 24·0	·2216951	1 2·3	131 27 0·1	2 48 51·4	·8563814
July 1	7 41 37·49	22 39 36·4	·2209618	1 3·6	133 4 30·9	2 52 0·7	·8563850
2	7 46 52·19	22 28 9·2	·2202126	1 4·9	134 42 2·1	2 55 1·7	·8563910
3	7 52 5·97	22 16 3·0	·2194474	1 6·2	136 19 33·7	2 57 54·2	·8563993
4	7 57 18·80	22 3 18·1	·2186661	1 7·5	137 57 5·5	3 0 38·2	·8564100
5	8 2 30·62	21 49 55·1	·2178686	1 8·7	139 34 37·4	3 3 13·5	·8564230
6	8 7 41·41	21 35 54·5	·2170549	1 9·9	141 12 9·5	3 5 39·9	·8564383
7	8 12 51·13	21 21 16·9	·2162249	1 11·2	142 49 41·6	3 7 57·4	·8564559
8	8 17 59·76	21 6 2·7	·2153785	1 12·4	144 27 13·5	3 10 5·8	·8564758
9	8 23 7·26	20 50 12·7	·2145158	1 13·6	146 4 45·3	3 12 5·0	·8564980
10	8 28 13·61	20 33 47·3	·2136366	1 14·7	147 42 16·9	3 13 54·9	·8565225
11	8 33 18·78	20 16 47·2	·2127410	1 15·9	149 19 48·1	3 15 35·5	·8565491
12	8 38 22·76	19 59 13·1	·2118291	1 17·0	150 57 18·8	3 17 6·7	·8565780
13	8 43 25·53	19 41 5·6	·2109009	1 18·1	152 34 49·0	3 18 28·4	·8566091
14	8 48 27·07	19 22 25·3	·2099564	1 19·2	154 12 18·6	3 19 40·4	·8566423
15	8 53 27·37	19 3 12·9	·2089957	1 20·2	155 49 47·5	3 20 42·9	·8566776
16	8 58 26·42	18 43 29·0	·2080189	1 21·3	157 27 15·5	3 21 35·7	·8567151
17	9 3 24·23	18 23 14·4	·2070260	1 22·3	159 4 42·7	3 22 18·8	·8567546
18	9 8 20·77	18 2 29·7	·2060170	1 23·3	160 42 8·9	3 22 52·1	·8567962
19	9 13 16·06	17 41 15·6	·2049920	1 24·3	162 19 34·0	3 23 15·7	·8568398
20	9 18 10·09	17 19 32·8	·2039510	1 25·2	163 56 58·0	3 23 29·5	·8568854
21	9 23 2·88	16 57 22·0	·2028942	1 26·2	165 34 20·8	3 23 33·6	·8569329
22	9 27 54·42	16 34 43·9	·2018215	1 27·1	167 11 42·3	3 23 27·9	·8569823
23	9 32 44·73	16 11 39·1	·2007330	1 28·0	168 49 2·4	3 23 12·4	·8570336
24	9 37 33·82	15 48 8·4	·1996287	1 28·8	170 26 21·0	3 22 47·2	·8570867
25	9 42 21·71	15 24 12·4	·1985086	1 29·7	172 3 38·1	3 22 12·3	·8571415

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	h m s	North. ° ′ ″		h m	° ′ ″	North. ° ′ ″	
July 25	9 42 21·71	15 24 12·4	·1985086	1 29·7	172 3 38·1	3 22 12·3	·8571415
26	9 47 8·41	14 59 51·9	·1973727	1 30·5	173 40 53·5	3 21 27·6	·8571981
27	9 51 53·94	14 35 7·7	·1962211	1 31·3	175 18 7·3	3 20 33·4	·8572564
28	9 56 38·32	14 10 0·4	·1950536	1 32·1	176 55 19·2	3 19 29·5	·8573163
29	10 1 21·57	13 44 30·8	·1938701	1 32·9	178 32 29·3	3 18 16·2	·8573778
30	10 6 3·71	13 18 39·5	·1926705	1 33·7	180 9 37·5	3 16 53·3	·8574409
31	10 10 44·76	12 52 27·3	·1914548	1 34·4	181 46 43·7	3 15 21·1	·8575054
Aug. 1	10 15 24·75	12 25 54·9	·1902228	1 35·2	183 23 47·8	3 13 39·6	·8575714
2	10 20 3·70	11 59 3·1	·1889746	1 35·9	185 0 49·7	3 11 48·9	·8576387
3	10 24 41·63	11 31 52·5	·1877100	1 36·6	186 37 49·5	3 9 49·1	·8577073
4	10 29 18·58	11 4 24·0	·1864290	1 37·2	188 14 47·0	3 7 40·2	·8577773
5	10 33 54·57	10 36 38·2	·1851314	1 37·9	189 51 42·3	3 5 22·5	·8578484
6	10 38 29·64	10 8 35·9	·1838173	1 38·5	191 28 35·1	3 2 56·0	·8579206
7	10 43 3·81	9 40 17·8	·1824866	1 39·1	193 5 25·6	3 0 20·9	·8579939
8	10 47 37·11	9 11 44·7	·1811391	1 39·7	194 42 13·6	2 57 37·2	·8580683
9	10 52 9·57	8 42 57·3	·1797749	1 40·3	196 18 59·2	2 54 45·2	·8581436
10	10 56 41·23	8 13 56·4	·1783939	1 40·9	197 55 42·2	2 51 45·0	·8582199
11	11 1 12·11	7 44 42·7	·1769962	1 41·5	199 32 22·6	2 48 36·7	·8582970
12	11 5 42·24	7 15 16·9	·1755817	1 42·1	201 9 0·4	2 45 20·5	·8583749
13	11 10 11·67	6 45 39·7	·1741506	1 42·6	202 45 35·6	2 41 56·5	·8584535
14	11 14 40·43	6 15 51·9	·1727029	1 43·2	204 22 8·2	2 38 25·0	·8585328
15	11 19 8·55	5 45 54·2	·1712386	1 43·7	205 58 38·1	2 34 46·0	·8586126
16	11 23 36·08	5 15 47·3	·1697578	1 44·2	207 35 5·3	2 30 59·8	·8586930
17	11 28 3·05	4 45 31·8	·1682606	1 44·7	209 11 29·7	2 27 6·6	·8587739
18	11 32 29·51	4 15 8·6	·1667470	1 45·2	210 47 51·4	2 23 6·5	·8588552
19	11 36 55·49	3 44 38·2	·1652170	1 45·7	212 24 10·4	2 18 59·8	·8589369
20	11 41 21·03	3 14 1·4	·1636706	1 46·2	214 0 26·7	2 14 46·6	·8590188
21	11 45 46·18	2 43 18·9	·1621079	1 46·6	215 36 40·2	2 10 27·2	·8591009
22	11 50 10·97	2 12 31·4	·1605290	1 47·1	217 12 51·0	2 6 1·8	·8591832
23	11 54 35·46	1 41 39·4	·1589337	1 47·6	218 48 59·0	2 1 30·6	·8592655
24	11 58 59·68	1 10 43·7	·1573222	1 48·0	220 25 4·3	1 56 53·8	·8593479
25	12 3 23·69	0 39 45·0	·1556943	1 48·5	222 1 6·8	1 52 11·6	·8594303
26	12 7 47·52	0 8 44·0	·1540500	1 49·0	223 37 6·6	1 47 24·3	·8595125
		South.					
27	12 12 11·21	0 22 18·6	·1523892	1 49·4	225 13 3·8	1 42 32·1	·8595946
28	12 16 34·82	0 53 22·2	·1507116	1 49·8	226 48 58·3	1 37 35·2	·8596764
29	12 20 58·38	1 24 26·0	·1490173	1 50·3	228 24 50·1	1 32 33·9	·8597580
30	12 25 21·94	1 55 29·4	·1473061	1 50·8	230 0 39·3	1 27 28·4	·8598392
31	12 29 45·53	2 26 31·6	·1455779	1 51·2	231 36 26·0	1 22 18·9	·8599199
Sept. 1	12 34 9·21	2 57 32·0	·1438327	1 51·7	233 12 10·1	1 17 5·7	·8600001
2	12 38 33·01	3 28 29·9	·1420702	1 52·1	234 47 51·6	1 11 49·0	·8600798
3	12 42 56·98	3 59 24·5	·1402902	1 52·6	236 23 30·7	1 6 29·1	·8601589
4	12 47 21·15	4 30 15·1	·1384926	1 53·0	237 59 7·4	1 1 6·2	·8602373

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	Noon.	Noon.	Noon.		Noon.	Noon.	Noon.
	h m s	South. ° ′ ″	○	h m	° ′ ″	North. ° ′ ″	♀
Sept. 4	12 47 21·15	4 30 15·1	·1384926	1 53·0	237 59 7·4	1 1 6·2	·8602373
5	12 51 45·56	5 1 1·0	·1366772	1 53·5	239 34 41·7	0 55 40·7	·8603150
6	12 56 10·26	5 31 41·5	·1348440	1 54·0	241 10 13·6	0 50 12·6	·8603919
7	13 0 35·27	6 2 15·9	·1329928	1 54·5	242 45 43·3	0 44 42·4	·8604679
8	13 5 0·64	6 32 43·4	·1311236	1 54·9	244 21 10·7	0 39·10·2	·8605430
9	13 9 26·40	7 3 3·3	·1292364	1 55·4	245 56 36·0	0 33 36·3	·8606172
10	13 13 52·60	7 33 14·8	·1273311	1 55·9	247 31 59·2	0 28 0·9	·8606903
11	13 18 19·25	8 3·17·3	·1254076	1 56·4	249 7 20·3	0 22 24·4	·8607624
12	13 22 46·41	8 33 10·0	·1234659	1 56·9	250 42 39·4	0 16 46·9	·8608333
13	13 27 14·10	9 2 52·2	·1215060	1 57·4	252 17 56·5	0 11 8·8	·8609031
14	13 31 42·36	9 32 23·3	·1195279	1 58·0	253 53 11·8	0 5 30·3	·8609716
						South.	
15	13 36 11·22	10 1 42·4	·1175315	1 58·5	255 28 25·3	0 0 8·4	·8610388
16	13 40 40·73	10 30 48·8	·1155167	1 59·1	257 3 37·0	0 5 46·9	·8611047
17	13 45 10·91	10 59 41·8	·1134836	1 59·6	258 38 47·1	0 11 25·1	·8611692
18	13 49 41·81	11 28 20·8	·1114321	2 0·2	260 13 55·5	0 17 2·7	·8612322
19	13 54 13·45	11 56 45·0	·1093622	2 0·8	261 49 2·4	0 22 39·4	·8612937
20	13 58 45·87	12 24 53·6	·1072740	2 1·4	263 24 7·8	0 28 15·0	·8613537
21	14 3 19·10	12 52 46·0	·1051675	2 2·0	264 59 11·8	0 33 49·1	·8614122
22	14 7 53·17	13 20 21·4	·1030424	2 2·6	266 34 14·5	0 39 21·7	·8614690
23	14 12 28·11	13 47 39·2	·1008987	2 3·3	268 9 16·0	0 44 52·3	·8615241
24	14 17 3·95	14 14 38·5	·0987363	2 3·9	269 44 16·2	0 50 20·7	·8615776
25	14 21 40·72	14 41 18·7	·0965549	2 4·6	271 19 15·3	0 55 46·8	·8616293
26	14 26 18·44	15 7 38·9	·0943543	2 5·3	272 54 13·4	1 1 10·4	·8616792
27	14 30 57·15	15 33 38·5	·0921344	2 6·0	274 29 10·5	1 6 31·0	·8617273
28	14 35 36·85	15 59 16·8	·0898950	2 6·7	276 4 6·7	1 11 48·5	·8617736
29	14 40 17·58	16 24 32·9	·0876359	2 7·4	277 39 2·0	1 17 2·7	·8618179
30	14 44 59·34	16 49 26·1	·0853566	2 8·2	279 13 56·6	1 22 13·2	·8618603
Oct. 1	14 49 42·17	17 13 55·7	·0830570	2 9·0	280 48 50·5	1 27 20·0	·8619008
2	14 54 26·06	17 38 1·0	·0807369	2 9·8	282 23 43·8	1 32 22·6	·8619393
3	14 59 11·03	18 1 41·1	·0783959	2 10·6	283 58 36·6	1 37 21·0	·8619758
4	15 3 57·09	18 24 55·4	·0760338	2 11·4	285 33 28·9	1 42 15·0	·8620102
5	15 8 44·23	18 47 43·1	·0736504	2 12·2	287 8 20·8	1 47 4·2	·8620426
6	15 13 32·47	19 10 3·4	·0712453	2 13·1	288 43 12·4	1 51 48·5	·8620728
7	15 18 21·80	19 31 55·6	·0688184	2 14·0	290 18 3·7	1 56 27·6	·8621010
8	15 23 12·21	19 53 19·0	·0663694	2 14·9	291 52 54·9	2 1 1·4	·8621270
9	15 28 3·71	20 14 12·9	·0638981	2 15·8	293 27 45·9	2 5 29·6	·8621509
10	15 32 56·27	20 34 36·6	·0614044	2 16·7	295 2 36·9	2 9 52·1	·8621726
11	15 37 49·90	20 54 29·3	·0588881	2 17·7	296 37 27·9	2 14 8·6	·8621921
12	15 42 44·57	21 13 50·4	·0563490	2 18·7	298 12 19·0	2 18 19·0	·8622094
13	15 47 40·26	21 32 39·2	·0537870	2 19·7	299 47 10·2	2 22 23·1	·8622245
14	15 52 36·97	21 50 55·0	·0512020	2 20·7	301 22 1·5	2 26 20·6	·8622374
15	15 57 34·66	22 8 37·2	·0485939	2 21·7	302 56 53·1	2 30 11·5	·8622481

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	h m s	South. ° ′ ″	0	h m	° ′ ″	South. ° ′ ″	9
Oct. 15	15 57 34·66	22 8 37·2	·0485939	2 21·7	302 56 53·1	2 30 11·5	·8622481
16	16 2 33·32	22 25 45·2	·0459625	2 22·7	304 31 45·0	2 33 55·5	·8622565
17	16 7 32·92	22 42 18·3	·0433077	2 23·8	306 6 37·3	2 37 32·5	·8622627
18	16 12 33·43	22 58 15·9	·0406294	2 24·8	307 41 30·0	2 41 2·3	·8622667
19	16 17 34·83	23 13 37·5	·0379274	2 25·9	309 16 23·1	2 44 24·7	·8622684
20	16 22 37·07	23 28 22·4	·0352014	2 27·0	310 51 16·7	2 47 39·7	·8622678
21	16 27 40·14	23 42 30·1	·0324513	2 28·1	312 26 10·8	2 50 47·0	·8622650
22	16 32 43·98	23 56 0·1	·0296769	2 29·3	314 1 5·6	2 53 46·5	·8622599
23	16 37 48·57	24 8 51·9	·0268778	2 30·4	315 36 1·0	2 56 38·0	·8622526
24	16 42 53·85	24 21 4·9	·0240538	2 31·5	317 10 57·1	2 59 21·5	·8622430
25	16 47 59·79	24 32 38·7	·0212046	2 32·7	318 45 54·0	3 1 56·8	·8622312
26	16 53 6·34	24 43 32·9	·0183299	2 33·9	320 20 51·6	3 4 23·8	·8622172
27	16 58 13·45	24 53 47·0	·0154293	2 35·0	321 55 50·1	3 6 42·4	·8622009
28	17 3 21·07	25 3 20·6	·0125023	2 36·2	323 30 49·4	3 8 52·4	·8621825
29	17 8 29·13	25 12 13·4	·0095485	2 37·4	325 5 49·6	3 10 53·9	·8621618
30	17 13 37·57	25 20 25·0	·0065675	2 38·6	326 40 50·8	3 12 46·6	·8621390
31	17 18 46·33	25 27 55·1	·0035588	2 39·8	328 15 52·9	3 14 30·5	·8621140
Nov. 1	17 23 55·35	25 34 43·3	·0005220	2 41·0	329 50 56·1	3 16 5·5	·8620869
			9				
2	17 29 4·55	25 40 49·5	·9974566	2 42·3	331 26 0·3	3 17 31·6	·8620576
3	17 34 13·85	25 46 13·5	·9943621	2 43·5	333 1 5·5	3 18 48·6	·8620263
4	17 39 23·19	25 50 55·0	·9912381	2 44·7	334 36 11·8	3 19 56·5	·8619929
5	17 44 32·49	25 54 53·9	·9880842	2 45·9	336 11 19·2	3 20 55·3	·8619575
6	17 49 41·68	25 58 10·1	·9848999	2 47·1	337 46 27·7	3 21 44·9	·8619200
7	17 54 50·66	26 0 43·5	·9816848	2 48·3	339 21 37·4	3 22 25·2	·8618805
8	17 59 59·37	26 2 34·1	·9784385	2 49·5	340 56 48·3	3 22 56·3	·8618391
9	18 5 7·71	26 3 41·9	·9751605	2 50·7	342 32 0·4	3 23 18·1	·8617957
10	18 10 15·61	26 4 6·9	·9718507	2 51·9	344 7 13·7	3 23 30·5	·8617505
11	18 15 22·97	26 3 49·2	·9685085	2 53·1	345 42 28·3	3 23 33·6	·8617033
12	18 20 29·72	26 2 48·9	·9651336	2 54·2	347 17 44·2	3 23 27·3	·8616543
13	18 25 35·78	26 1 6·0	·9617258	2 55·4	348 53 1·3	3 23 11·6	·8616035
14	18 30 41·06	25 58 40·9	·9582848	2 56·5	350 28 19·7	3 22 46·6	·8615509
15	18 35 45·48	25 55 33·6	·9548101	2 57·7	352 3 39·5	3 22 12·3	·8614967
16	18 40 48·97	25 51 44·5	·9513015	2 58·8	353 39 0·5	3 21 28·6	·8614407
17	18 45 51·46	25 47 13·7	·9477588	2 59·9	355 14 22·9	3 20 35·7	·8613831
18	18 50 52·86	25 42 1·7	·9441814	3 1·0	356 49 46·6	3 19 33·5	·8613239
19	18 55 53·09	25 36 8·7	·9405691	3 2·0	358 25 11·7	3 18 22·1	·8612631
20	19 0 52·09	25 29 35·1	·9369215	3 3·1	0 0 38·2	3 17 1·5	·8612008
21	19 5 49·79	25 22 21·4	·9332381	3 4·1	1 36 6·0	3 15 31·8	·8611371
22	19 10 46·12	25 14 27·8	·9295183	3 5·1	3 11 35·3	3 13 53·0	·8610720
23	19 15 41·00	25 5 54·9	·9257617	3 6·1	4 47 6·0	3 12 5·3	·8610055
24	19 20 34·38	24 56 43·1	·9219677	3 7·0	6 22 38·1	3 10 8·6	·8609377
25	19 25 26·19	24 46 52·8	·9181357	3 7·9	7 58 11·6	3 8 3·1	·8608686

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	h m s	South. ° ′ ″	9	h m	° ′ ″	South. ° ′ ″	9
Nov. 25	19 25 26·19	24 46 52·8	·9181357	3 7·9	7 58 11·6	3 8 3·1	·8608686
26	19 30 16·37	24 36 24·8	·9142650	3 8·8	9 33 46·6	3 5 48·9	·8607983
27	19 35 4·84	24 25 19·4	·9103549	3 9·7	11 9 23·0	3 3 26·0	·8607269
28	19 39 51·55	24 13 37·3	·9064047	3 10·5	12 45 0·9	3 0 54·6	·8606543
29	19 44 36·44	24 1 19·2	·9024137	3 11·3	14 20 40·3	2 58 14·7	·8605807
30	19 49 19·45	23 48 25·6	·8983812	3 12·1	15 56 21·2	2 55 26·5	·8605061
Dec. 1	19 54 0·50	23 34 57·3	·8943065	3 12·8	17 32 3·6	2 52 30·1	·8604305
2	19 58 39·55	23 20 54·9	·8901889	3 13·5	19 7 47·4	2 49 25·6	·8603541
3	20 3 16·52	23 6 19·1	·8860276	3 14·2	20 43 32·8	2 46 13·3	·8602769
4	20 7 51·37	22 51 10·7	·8818218	3 14·8	22 19 19·7	2 42 53·1	·8601989
5	20 12 24·03	22 35 30·5	·8775709	3 15·4	23 55 8·2	2 39 25·2	·8601202
6	20 16 54·44	22 19 19·3	·8732739	3 16·0	25 30 58·2	2 35 49·8	·8600408
7	20 21 22·55	22 2 37·8	·8689303	3 16·5	27 6 49·7	2 32 7·1	·8599609
8	20 25 48·30	21 45 27·0	·8645394	3 17·0	28 42 42·8	2 28 17·3	·8598805
9	20 30 11·63	21 27 47·6	·8601008	3 17·4	30 18 37·5	2 24 20·4	·8597996
10	20 34 32·49	21 9 40·6	·8556138	3 17·8	31 54 33·8	2 20 16·7	·8597183
11	20 38 50·82	20 51 6·7	·8510778	3 18·2	33 30 31·6	2 16 6·4	·8596367
12	20 43 6·59	20 32 6·9	·8464924	3 18·5	35 6 31·1	2 11 49·6	·8595548
13	20 47 19·73	20 12 42·0	·8418569	3 18·8	36 42 32·2	2 7 26·6	·8594728
14	20 51 30·21	19 52 52·9	·8371708	3 19·0	38 18 35·0	2 2 57·5	·8593906
15	20 55 37·98	19 32 40·5	·8324336	3 19·2	39 54 39·4	1 58 22·5	·8593082
16	20 59 42·99	19 12 5·8	·8276449	3 19·3	41 30 45·4	1 53 41·9	·8592259
17	21 3 45·19	18 51 9·6	·8228042	3 19·4	43 6 53·1	1 48 55·8	·8591436
18	21 7 44·54	18 29 52·9	·8179110	3 19·4	44 43 2·5	1 44 4·6	·8590615
19	21 11 40·99	18 8 16·5	·8129648	3 19·4	46 19 13·6	1 39 8·3	·8589795
20	21 15 34·51	17 46 21·4	·8079650	3 19·4	47 55 26·4	1 34 7·3	·8588978
21	21 19 25·05	17 24 8·4	·8029111	3 19·3	49 31 40·9	1 29 1·8	·8588164
22	21 23 12·57	17 1 38·6	·7978025	3 19·1	51 7 57·1	1 23 51·9	·8587353
23	21 26 57·02	16 38 52·8	·7926385	3 18·9	52 44 15·0	1 18 38·0	·8586547
24	21 30 38·36	16 15 52·0	·7874186	3 18·6	54 20 34·7	1 13 20·2	·8585746
25	21 34 16·54	15 52 37·2	·7821420	3 18·3	55 56 56·1	1 7 58·9	·8584951
26	21 37 51·50	15 29 9·3	·7768081	3 17·9	57 33 19·3	1 2 34·2	·8584162
27	21 41 23·19	15 5 29·3	·7714161	3 17·5	59 9 44·2	0 57 6·5	·8583379
28	21 44 51·55	14 41 38·4	·7659655	3 17·0	60 46 10·9	0 51 36·0	·8582605
29	21 48 16·52	14 17 37·4	·7604556	3 16·5	62 22 39·3	0 46 2·9	·8581838
30	21 51 38·03	13 53 27·5	·7548858	3 15·9	63 59 9·5	0 40 27·5	·8581080
31	21 54 56·00	13 29 9·8	·7492555	3 15·3	65 35 41·5	0 34 50·1	·8580332
32	21 58 10·36	13 4 45·4	·7435641	3 14·6	67 12 15·3	0 29 11·0	·8579594

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	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*South.* ° ′ ″	°	h m	° ′ ″	*South.* ° ′ ″	°
Jan. 1	23 52 9·75	1 13 8·9	·1216309	5 7·4	38 51 22·2	0 18 28·4	·1625262
2	23 54 38·19	0 55 37·8	·1243644	5 5·9	39 25 42·7	0 17 22·6	·1628819
3	23 57 6·68	0 38 6·9	·1270849	5 4·4	39 59 59·7	0 16 16·9	·1632388
4	23 59 35·23	0 20 36·3	·1297925	5 3·0	40 34 13·4	0 15 11·1	·1635970
5	0 2 3·85	0 3 6·1	·1324871	5 1·5	41 8 23·7	0 14 5·4	·1639565
		North.					
6	0 4 32·54	0 14 23·6	·1351688	5 0·1	41 42 30·6	0 12 59·7	·1643170
7	0 7 1·30	0 31 52·6	·1378374	4 58·6	42 16 34·1	0 11 54·0	·1646788
8	0 9 30·17	0 49 20·9	·1404932	4 57·1	42 50 34·2	0 10 48·4	·1650416
9	0 11 59·13	1 6 48·3	·1431359	4 55·7	43 24 30·9	0 9 42·8	·1654054
10	0 14 28·18	1 24 14·7	·1457653	4 54·2	43 58 24·1	0 8 37·3	·1657703
11	0 16 57·32	1 41 39·9	·1483814	4 52·8	44 32 13·9	0 7 31·8	·1661361
12	0 19 26·56	1 59 3·8	·1509842	4 51·3	45 6 0·3	0 6 26·4	·1665029
13	0 21 55·90	2 16 26·3	·1535735	4 49·9	45 39 43·3	0 5 21·1	·1668705
14	0 24 25·35	2 33 47·2	·1561491	4 48·4	46 13 22·8	0 4 15·9	·1672390
15	0 26 54·91	2 51 6·3	·1587111	4 47·0	46 46 58·9	0 3 10·7	·1676083
16	0 29 24·58	3 8 23·5	·1612596	4 45·5	47 20 31·6	0 2 5·7	·1679783
17	0 31 54·36	3 25 38·7	·1637944	4 44·1	47 54 0·8	0 1 0·7	·1683491
						North.	
18	0 34 24·24	3 42 51·6	·1663156	4 42·6	48 27 26·6	0 0 4·1	·1687205
19	0 36 54·24	4 0 2·3	·1688232	4 41·2	49 0 49·0	0 1 8·9	·1690926
20	0 39 24·35	4 17 10·5	·1713171	4 39·7	49 34 8·0	0 2 13·5	·1694653
21	0 41 54·57	4 34 16·0	·1737976	4 38·3	50 7 23·5	0 3 18·0	·1698386
22	0 44 24·91	4 51 18·8	·1762646	4 36·9	50 40 35·5	0 4 22·3	·1702124
23	0 46 55·37	5 8 18·7	·1787184	4 35·4	51 13 44·2	0 5 26·6	·1705868
24	0 49 25·96	5 25 15·6	·1811589	4 34·0	51 46 49·4	0 6 30·7	·1709615
25	0 51 56·68	5 42 9·4	·1835862	4 32·6	52 19 51·2	0 7 34·6	·1713367
26	0 54 27·52	5 58 59·9	·1860005	4 31·2	52 52 49·6	0 8 38·4	·1717122
27	0 56 58·51	6 15 47·1	·1884019	4 29·7	53 25 44·5	0 9 42·0	·1720881
28	0 59 29·63	6 32 30·7	·1907904	4 28·3	53 58 36·0	0 10 45·5	·1724643
29	1 2 0·90	6 49 10·8	·1931661	4 26·9	54 31 24·2	0 11 48·8	·1728408
30	1 4 32·32	7 5 47·2	·1955291	4 25·5	55 4 8·9	0 12 52·0	·1732175
31	1 7 3·90	7 22 19·7	·1978793	4 24·1	55 36 50·2	0 13 55·0	·1735944
Feb. 1	1 9 35·64	7 38 48·3	·2002170	4 22·6	56 9 28·1	0 14 57·7	·1739714
2	1 12 7·56	7 55 12·9	·2025421	4 21·2	56 42 2·6	0 16 0·3	·1743486
3	1 14 39·65	8 11 33·4	·2048544	4 19·8	57 14 33·8	0 17 2·8	·1747259
4	1 17 11·93	8 27 49·5	·2071540	4 18·4	57 47 1·5	0 18 5·0	·1751033
5	1 19 44·40	8 44 1·4	·2094407	4 17·0	58 19 25·9	0 19 7·0	·1754807
6	1 22 17·06	9 0 8·7	·2117147	4 15·6	58 51 46·9	0 20 8·7	·1758581
7	1 24 49·93	9 16 11·5	·2139758	4 14·2	59 24 4·5	0 21 10·3	·1762355
8	1 27 23·00	9 32 9·5	·2162239	4 12·9	59 56 18·8	0 22 11·6	·1766128
9	1 29 56·28	9 48 2·7	·2184589	4 11·5	60 28 29·8	0 23 12·7	·1769899
10	1 32 29·77	10 3 50·9	·2206808	4 10·1	61 0 37·4	0 24 13·6	·1773670

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	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*North.* ° ′ ″	°	h m	° ′ ″	*North.* ° ′ ″	°
Feb. 10	1 32 29·77	10 3 50·9	·2206808	4 10·1	61 0 37·4	0 24 13·6	·1773670
11	1 35 3·47	10 19 34·0	·2228896	4 8·7	61 32 41·6	0 25 14·3	·1777438
12	1 37 37·39	10 35 11·9	·2250852	4 7·3	62 4 42·5	0 26 14·7	·1781205
13	1 40 11·53	10 50 44·4	·2272674	4 5·9	62 36 40·2	0 27 14·9	·1784969
14	1 42 45·88	11 6 11·4	·2294363	4 4·6	63 8 34·5	0 28 14·8	·1788731
15	1 45 20·45	11 21 32·7	·2315919	4 3·2	63 40 25·5	0 29 14·5	·1792489
16	1 47 55·24	11 36 48·3	·2337343	4 1·9	64 12 13·2	0 30 13·9	·1796244
17	1 50 30·26	11 51 57·9	·2358636	4 0·5	64 43 57·6	0 31 13·1	·1799995
18	1 53 5·49	12 7 1·6	·2379796	3 59·2	65 15 38·8	0 32 12·0	·1803742
19	1 55 40·94	12 21 59·1	·2400824	3 57·8	65 47 16·7	0 33 10·6	·1807485
20	1 58 16·62	12 36 50·3	·2421723	3 56·5	66 18 51·4	0 34 9·0	·1811222
21	2 0 52·51	12 51 35·2	·2442492	3 55·1	66 50 22·8	0 35 7·1	·1814955
22	2 3 28·64	13 6 13·6	·2463133	3 53·8	67 21 51·0	0 36 4·9	·1818683
23	2 6 5·00	13 20 45·3	·2483646	3 52·4	67 53 15·9	0 37 2·4	·1822405
24	2 8 41·59	13 35 10·4	·2504032	3 51·1	68 24 37·6	0 37 59·7	·1826121
25	2 11 18·41	13 49 28·6	·2524293	3 49·8	68 55 56·2	0 38 56·6	·1829831
26	2 13 55·48	14 3 39·9	·2544429	3 48·5	69 27 11·5	0 39 53·3	·1833535
27	2 16 32·78	14 17 44·2	·2564441	3 47·1	69 58 23·7	0 40 49·7	·1837232
28	2 19 10·34	14 31 41·3	·2584329	3 45·8	70 29 32·6	0 41 45·8	·1840922
Mar. 1	2 21 48·14	14 45 31·3	·2604093	3 44·5	71 0 38·4	0 42 41·5	·1844605
2	2 24 26·19	14 59 14·0	·2623733	3 43·2	71 31 41·1	0 43 37·0	·1848280
3	2 27 4·50	15 12 49·3	·2643252	3 41·9	72 2 40·6	0 44 32·2	·1851948
4	2 29 43·08	15 26 17·1	·2662647	3 40·6	72 33 37·0	0 45 27·0	·1855607
5	2 32 21·92	15 39 37·3	·2681918	3 39·3	73 4 30·2	0 46 21·6	·1859258
6	2 35 1·02	15 52 49·8	·2701066	3 38·0	73 35 20·4	0 47 15·8	·1862900
7	2 37 40·40	16 5 54·4	·2720089	3 36·7	74 6 7·5	0 48 9·8	·1866534
8	2 40 20·04	16 18 51·2	·2738987	3 35·5	74 36 51·5	0 49 3·4	·1870158
9	2 42 59·97	16 31 39·9	·2757760	3 34·2	75 7 32·4	0 49 56·6	·1873773
10	2 45 40·17	16 44 20·6	·2776407	3 32·9	75 38 10·3	0 50 49·6	·1877378
11	2 48 20·64	16 56 52·9	·2794928	3 31·7	76 8 45·2	0 51 42·2	·1880974
12	2 51 1·39	17 9 16·9	·2813322	3 30·4	76 39 17·0	0 52 34·5	·1884559
13	2 53 42·41	17 21 32·5	·2831589	3 29·1	77 9 45·8	0 53 26·5	·1888133
14	2 56 23·69	17 33 39·5	·2849729	3 27·9	77 40 11·7	0 54 18·1	·1891697
15	2 59 5·24	17 45 37·8	·2867740	3 26·6	78 10 34·6	0 55 9·4	·1895250
16	3 1 47·06	17 57 27·4	·2885624	3 25·4	78 40 54·5	0 56 0·3	·1898791
17	3 4 29·14	18 9 8·0	·2903381	3 24·1	79 11 11·5	0 56 50·9	·1902321
18	3 7 11·49	18 20 39·7	·2921010	3 22·9	79 41 25·6	0 57 41·2	·1905839
19	3 9 54·08	18 32 2·3	·2938514	3 21·7	80 11 36·7	0 58 31·1	·1909345
20	3 12 36·94	18 43 15·8	·2955892	3 20·4	80 41 45·0	0 59 20·6	·1912840
21	3 15 20·05	18 54 20·0	·2973143	3 19·2	81 11 50·3	1 0 9·8	·1916322
22	3 18 3·40	19 5 14·8	·2990271	3 18·0	81 41 52·8	1 0 58·7	·1919791
23	3 20 47·00	19 16 0·2	·3007275	3 16·8	82 11 52·4	1 1 47·2	·1923248

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Month and Day.	Geocentric. Apparent Right Ascension. Noon.	Geocentric. Apparent Declination. Noon.	Geocentric. Log. of True Dist. from the Earth. Noon.	Geocentric. Meridian Passage.	Heliocentric. Longitude. Noon.	Heliocentric. Latitude. Noon.	Heliocentric. Log. of Rad. Vect. Noon.
	h m s	North. ° ′ ″	°	h m	° ′ ″	North. ° ′ ″	°
Mar. 23	3 20 47·00	19 16 0·2	·3007275	3 16·8	82 11 52·4	1 1 47·2	·1923248
24	3 23 30·85	19 26 36·1	·3024158	3 15·6	82 41 49·2	1 2 35·3	·1926692
25	3 26 14·95	19 37 2·3	·3040919	3 14·4	83 11 43·2	1 3 23·1	·1930123
26	3 28 59·28	19 47 18·9	·3057561	3 13·2	83 41 34·3	1 4 10·5	·1933540
27	3 31 43·85	19 57 25·6	·3074085	3 12·0	84 11 22·6	1 4 57·5	·1936944
28	3 34 28·66	20 7 22·5	·3090491	3 10·8	84 41 8·2	1 5 44·2	·1940334
29	3 37 13·71	20 17 9·5	·3106778	3 9·6	85 10 51·0	1 6 30·5	·1943710
30	3 39 59·00	20 26 46·4	·3122947	3 8·4	85 40 31·0	1 7 16·5	·1947073
31	3 42 44·53	20 36 13·3	·3138998	3 7·2	86 10 8·3	1 8 2·0	·1950420
Apr. 1	3 45 30·30	20 45 30·1	·3154931	3 6·1	86 39 42·8	1 8 47·2	·1953753
2	3 48 16·31	20 54 36·7	·3170746	3 4·9	87 9 14·7	1 9 32·1	·1957071
3	3 51 2·57	21 3 33·0	·3186442	3 3·7	87 38 43·9	1 10 16·5	·1960375
4	3 53 49·05	21 12 18·9	·3202020	3 2·5	88 8 10·5	1 11 0·6	·1963663
5	3 56 35·77	21 20 54·5	·3217479	3 1·4	88 37 34·3	1 11 44·3	·1966936
6	3 59 22·72	21 29 19·5	·3232818	3 0·2	89 6 55·6	1 12 27·6	·1970193
7	4 2 9·89	21 37 33·9	·3248037	2 59·1	89 36 14·2	1 13 10·5	·1973434
8	4 4 57·29	21 45 37·7	·3263136	2 57·9	90 5 30·2	1 13 53·0	·1976659
9	4 7 44·90	21 53 30·7	·3278114	2 56·8	90 34 43·7	1 14 35·2	·1979868
10	4 10 32·72	22 1 13·0	·3292972	2 55·6	91 3 54·5	1 15 17·0	·1983061
11	4 13 20·74	22 8 44·4	·3307708	2 54·5	91 33 2·9	1 15 58·4	·1986237
12	4 16 8·95	22 16 4·8	·3322324	2 53·4	92 2 8·7	1 16 39·4	·1989397
13	4 18 57·36	22 23 14·3	·3336819	2 52·2	92 31 12·0	1 17 20·0	·1992539
14	4 21 45·95	22 30 12·7	·3351192	2 51·1	93 0 12·8	1 18 0·2	·1995665
15	4 24 34·71	22 37 0·0	·3365444	2 49·9	93 29 11·1	1 18 40·1	·1998773
16	4 27 23·64	22 43 36·2	·3379576	2 48·8	93 58 6·9	1 19 19·5	·2001864
17	4 30 12·73	22 50 1·1	·3393589	2 47·7	94 27 0·3	1 19 58·6	·2004938
18	4 33 1·97	22 56 14·8	·3407482	2 46·6	94 55 51·3	1 20 37·2	·2007994
19	4 35 51·35	23 2 17·2	·3421257	2 45·5	95 24 39·9	1 21 15·5	·2011032
20	4 38 40·87	23 8 8·2	·3434914	2 44·3	95 53 26·1	1 21 53·4	·2014052
21	4 41 30·52	23 13 47·9	·3448454	2 43·2	96 22 9·9	1 22 30·8	·2017054
22	4 44 20·30	23 19 16·1	·3461878	2 42·1	96 50 51·4	1 23 7·9	·2020037
23	4 47 10·19	23 24 32·8	·3475187	2 41·0	97 19 30·5	1 23 44·6	·2023002
24	4 50 0·20	23 29 38·1	·3488381	2 39·9	97 48 7·3	1 24 20·9	·2025949
25	4 52 50·32	23 34 31·8	·3501461	2 38·8	98 16 41·8	1 24 56·8	·2028877
26	4 55 40·53	23 39 14·0	·3514429	2 37·7	98 45 14·0	1 25 32·3	·2031786
27	4 58 30·85	23 43 44·5	·3527285	2 36·6	99 13 44·0	1 26 7·4	·2034676
28	5 1 21·25	23 48 3·5	·3540028	2 35·5	99 42 11·7	1 26 42·0	·2037547
29	5 4 11·74	23 52 10·8	·3552658	2 34·4	100 10 37·1	1 27 16·3	·2040399
30	5 7 2 31	23 56 6·5	·3565176	2 33·3	100 39 0·4	1 27 50·2	·2043232
May 1	5 9 52·96	23 59 50·4	·3577582	2 32·2	101 7 21·4	1 28 23·7	·2046045
2	5 12 43·69	24 3 22·6	·3589876	2 31·1	101 35 40·2	1 28 56·8	·2048839
3	5 15 34·48	24 6 43·1	·3602057	2 30·0	102 3 56·9	1 29 29·5	·2051613

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	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
		North.				*North.*	
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
May 3	5 15 34·48	24 6 43·1	·3602057	2 30·0	102 3 56·9	1 29 29·5	·2051613
4	5 18 25·32	24 9 51·8	·3614126	2 28·9	102 32 11·4	1 30 1·8	·2054367
5	5 21 16·22	24 12 48·8	·3626081	2 27·8	103 0 23·8	1 30 33·6	·2057101
6	5 24 7·16	24 15 33·9	·3637922	2 26·7	103 28 34·1	1 31 5·1	·2059815
7	5 26 58·13	24 18 7·2	·3649649	2 25·6	103 56 42·3	1 31 36·2	·2062509
8	5 29 49·13	24 20 28·7	·3661261	2 24·5	104 24 48·4	1 32 6·8	·2065182
9	5 32 40·15	24 22 38·3	·3672759	2 23·4	104 52 52·5	1 32 37·1	·2067835
10	5 35 31·18	24 24 36·1	·3684141	2 22·3	105 20 54·5	1 33 6·9	·2070467
11	5 38 22·20	24 26 22·1	·3695409	2 21·2	105 48 54·5	1 33 36·4	·2073079
12	5 41 13·21	24 27 56·3	·3706561	2 20·2	106 16 52·6	1 34 5·4	·2075669
13	5 44 4·19	24 29 18·6	·3717599	2 19·1	106 44 48·6	1 34 34·0	·2078239
14	5 46 55·15	24 30 29·1	·3728519	2 18·0	107 12 42·7	1 35 2·2	·2080787
15	5 49 46·06	24 31 27·8	·3739325	2 16·9	107 40 34·9	1 35 30·0	·2083314
16	5 52 36·92	24 32 14·7	·3750018	2 15·8	108 8 25·1	1 35 57·3	·2085820
17	5 55 27·72	24 32 49·8	·3760598	2 14·7	108 36 13·5	1 36 24·3	·2088304
18	5 58 18·46	24 33 13·1	·3771067	2 13·6	109 4 0·0	1 36 50·9	·2090767
19	6 1 9·11	24 33 24·7	·3781424	2 12·5	109 31 44·6	1 37 17·0	·2093208
20	6 3 59·68	24 33 24·5	·3791669	2 11·4	109 59 27·3	1 37 42·7	·2095628
21	6 6 50·15	24 33 12·7	·3801804	2 10·3	110 27 8·3	1 38 8·1	·2098025
22	6 9 40·52	24 32 49·1	·3811828	2 9·2	110 54 47·4	1 38 33·0	·2100401
23	6 12 30·79	24 32 13·9	·3821744	2 8·1	111 22 24·7	1 38 57·5	·2102755
24	6 15 20·94	24 31 27·1	·3831551	2 7·0	111 50 0·3	1 39 21·6	·2105087
25	6 18 10·97	24 30 28·6	·3841249	2 5·9	112 17 34·1	1 39 45·3	·2107396
26	6 21 0·87	24 29 18·6	·3850840	2 4·8	112 45 6·2	1 40 8·6	·2109683
27	6 23 50·65	24 27 57·0	·3860324	2 3·6	113 12 36·6	1 40 31·5	·2111948
28	6 26 40·28	24 26 24·0	·3869700	2 2·5	113 40 5·2	1 40 54·0	·2114191
29	6 29 29·78	24 24 39·4	·3878969	2 1·4	114 7 32·2	1 41 16·1	·2116411
30	6 32 19·12	24 22 43·4	·3888130	2 0·3	114 34 57·6	1 41 37·8	·2118608
31	6 35 8·31	24 20 35·9	·3897183	1 59·2	115 2 21·2	1 41 59·0	·2120783
June 1	6 37 57·35	24 18 17·0	·3906129	1 58·1	115 29 43·3	1 42 19·9	·2122935
2	6 40 46·21	24 15 46·8	·3914967	1 56·9	115 57 3·8	1 42 40·4	·2125064
3	6 43 34·91	24 13 5·3	·3923696	1 55·8	116 24 22·6	1 43 0·4	·2127170
4	6 46 23·43	24 10 12·5	·3932316	1 54·7	116 51 39·9	1 43 20·1	·2129253
5	6 49 11·76	24 7 8·5	·3940826	1 53·5	117 18 55·7	1 43 39·3	·2131313
6	6 51 59·89	24 3 53·4	·3949227	1 52·4	117 46 9·9	1 43 58·1	·2133350
7	6 54 47·83	24 0 27·1	·3957516	1 51·2	118 13 22·6	1 44 16·5	·2135364
8	6 57 35·56	23 56 49·9	·3965695	1 50·1	118 40 33·8	1 44 34·5	·2137354
9	7 0 23·07	23 53 1·6	·3973764	1 48·9	119 7 43·5	1 44 52·1	·2139321
10	7 3 10·36	23 49 2·4	·3981722	1 47·8	119 34 51·8	1 45 9·3	·2141264
11	7 5 57·41	23 44 52·3	·3989570	1 46·6	120 1 58·6	1 45 26·0	·2143184
12	7 8 44·23	23 40 31·4	·3997307	1 45·5	120 29 4·0	1 45 42·4	·2145080
13	7 11 30·80	23 35 59·8	·4004934	1 44·3	120 56 8·0	1 45 58·3	·2146953

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	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*North.* ° ′ ″	°	h m	° ′ ″	*North.* ° ′ ″	°
June 13	7 11 30·80	23 35 59·8	·4004934	1 44·3	120 56 8·0	1 45 58·3	·2146953
14	7 14 17·12	23 31 17·5	·4012451	1 43·1	121 23 10·6	1 46 13·9	·2148801
15	7 17 3·18	23 26 24·6	·4019859	1 42·0	121 50 11·9	1 46 29·0	·2150626
16	7 19 48·97	23 21 21·2	·4027159	1 40·8	122 17 11·8	1 46 43·8	·2152428
17	7 22 34·49	23 16 7·4	·4034351	1 39·6	122 44 10·3	1 46 58·1	·2154205
18	7 25 19·74	23 10 43·1	·4041435	1 38·4	123 11 7·6	1 47 12·0	·2155958
19	7 28 4·70	23 5 8·5	·4048413	1 37·2	123 38 3·6	1 47 25·5	·2157687
20	7 30 49·38	22 59 23·7	·4055285	1 36·0	124 4 58·2	1 47 38·6	·2159392
21	7 33 33·77	22 53 28·7	·4062051	1 34·8	124 31 51·7	1 47 51·3	·2161073
22	7 36 17·87	22 47 23·6	·4068712	1 33·6	124 58 43·9	1 48 3·6	·2162730
23	7 39 1·68	22 41 8·5	·4075268	1 32·4	125 25 34·8	1 48 15·5	·2164362
24	7 41 45·20	22 34 43·4	·4081719	1 31·2	125 52 24·6	1 48 27·0	·2165971
25	7 44 28·43	22 28 8·4	·4088068	1 30·0	126 19 13·2	1 48 38·1	·2167554
26	7 47 11·36	22 21 23·6	·4094312	1 28·7	126 46 0·7	1 48 48·8	·2169114
27	7 49 53·99	22 14 29·0	·4100451	1 27·5	127 12 47·0	1 48 59·1	·2170649
28	7 52 36·33	22 7 24·8	·4106486	1 26·3	127 39 32·2	1 49 9·0	·2172159
29	7 55 18·36	22 0 10·9	·4112416	1 25·0	128 6 16·3	1 49 18·4	·2173645
30	7 58 0·09	21 52 47·5	·4118241	1 23·8	128 32 59·3	1 49 27·5	·2175106
July 1	8 0 41·51	21 45 14·6	·4123960	1 22·5	128 59 41·3	1 49 36·2	·2176543
2	8 3 22·63	21 37 32·3	·4129573	1 21·3	129 26 22·2	1 49 44·4	·2177954
3	8 6 3·44	21 29 40·8	·4135079	1 20·0	129 53 2·1	1 49 52·3	·2179342
4	8 8 43·94	21 21 40·0	·4140478	1 18·8	130 19 41·0	1 49 59·8	·2180704
5	8 11 24·12	21 13 30·1	·4145770	1 17·5	130 46 18·9	1 50 6·8	·2182041
6	8 14 3·98	21 5 11·2	·4150954	1 16·2	131 12 55·8	1 50 13·5	·2183354
7	8 16 43·53	20 56 43·3	·4156029	1 14·9	131 39 31·8	1 50 19·7	·2184641
8	8 19 22·77	20 48 6·7	·4160995	1 13·6	132 6 6·9	1 50 25·6	·2185904
9	8 22 1·68	20 39 21·2	·4165853	1 12·4	132 32 41·0	1 50 31·1	·2187141
10	8 24 40·26	20 30 27·1	·4170603	1 11·0	132 59 14·2	1 50 36·1	·2188354
11	8 27 18·52	20 21 24·5	·4175245	1 9·7	133 25 46·6	1 50 40·8	·2189541
12	8 29 56·44	20 12 13·4	·4179779	1 8·4	133 52 18·1	1 50 45·1	·2190703
13	8 32 34·03	20 2 53·9	·4184204	1 7·1	134 18 48·7	1 50 49·0	·2191840
14	8 35 11·28	19 53 26·2	·4188523	1 5·8	134 45 18·6	1 50 52·5	·2192951
15	8 37 48·20	19 43 50·3	·4192734	1 4·5	135 11 47·6	1 50 55·6	·2194038
16	8 40 24·78	19 34 6·3	·4196839	1 3·1	135 38 15·8	1 50 58·3	·2195099
17	8 43 1·03	19 24 14·4	·4200839	1 1·8	136 4 43·3	1 51 0·6	·2196134
18	8 45 36·95	19 14 14·5	·4204733	1 0·5	136 31 10·0	1 51 2·5	·2197145
19	8 48 12·53	19 4 6·9	·4208523	0 59·1	136 57 35·9	1 51 4·0	·2198130
20	8 50 47·78	18 53 51·5	·4212209	0 57·8	137 24 1·2	1 51 5·1	·2199090
21	8 53 22·71	18 43 28·5	·4215790	0 56·4	137 50 25·8	1 51 5·9	·2200024
22	8 55 57·30	18 32 57·9	·4219268	0 55·0	138 16 49·7	1 51 6·2	·2200933
23	8 58 31·58	18 22 19·8	·4222642	0 53·7	138 43 12·9	1 51 6·1	·2201816
24	9 1 5·53	18 11 34·4	·4225912	0 52·3	139 9 35·5	1 51 5·7	·2202674

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	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*North.* ° ′ ″	°	h m	° ′ ″	*North.* ° ′ ″	°
July 24	9 1 5·53	18 11 34·4	·4225912	0 52·3	139 9 35·5	1 51 5·7	·2202674
25	9 3 39·17	18 0 41·6	·4229080	0 50·9	139 35 57·5	1 51 4·9	·2203507
26	9 6 12·50	17 49 41·7	·4232144	0 49·5	140 2 18·9	1 51 3·6	·2204314
27	9 8 45·51	17 38 34·5	·4235104	0 48·1	140 28 39·7	1 51 2·0	·2205095
28	9 11 18·22	17 27 20·4	·4237959	0 46·7	140 54 59·9	1 51 0·0	·2205851
29	9 13 50·62	17 15 59·2	·4240709	0 45·3	141 21 19·6	1 50 57·6	·2206581
30	9 16 22·73	17 4 31·2	·4243353	0 43·9	141 47 38·8	1 50 54·8	·2207286
31	9 18 54·54	16 52 56·4	·4245891	0 42·5	142 13 57·4	1 50 51·6	·2207965
Aug. 1	9 21 26·05	16 41 14·9	·4248322	0 41·1	142 40 15·6	1 50 48·0	·2208619
2	9 23 57·26	16 29 26·8	·4250647	0 39·7	143 6 33·3	1 50 44·0	·2209247
3	9 26 28·18	16 17 32·2	·4252864	0 38·2	143 32 50·6	1 50 39·7	·2209849
4	9 28 58·82	16 5 31·3	·4254973	0 36·8	143 59 7·4	1 50 34·9	·2210426
5	9 31 29·16	15 53 24·0	·4256974	0 35·4	144 25 23·9	1 50 29·8	·2210977
6	9 33 59·22	15 41 10·5	·4258866	0 33·9	144 51 40·0	1 50 24·3	·2211502
7	9 36 28·99	15 28 51·0	·4260650	0 32·5	145 17 55·6	1 50 18·4	·2212002
8	9 38 58·48	15 16 25·5	·4262325	0 31·1	145 44 11·0	1 50 12·1	·2212476
9	9 41 27·68	15 3 54·1	·4263891	0 29·6	146 10 26·0	1 50 5·4	·2212924
10	9 43 56·61	14 51 16·9	·4265350	0 28·1	146 36 40·6	1 49 58·4	·2213346
11	9 46 25·26	14 38 34·1	·4266700	0 26·7	147 2 55·0	1 49 50·9	·2213743
12	9 48 53·63	14 25 45·7	·4267942	0 25·2	147 29 9·1	1 49 43·1	·2214114
13	9 51 21·74	14 12 51·9	·4269076	0 23·7	147 55 23·0	1 49 34·9	·2214458
14	9 53 49·57	13 59 52·7	·4270103	0 22·3	148 21 36·5	1 49 26·3	·2214777
15	9 56 17·14	13 46 48·1	·4271024	0 20·8	148 47 49·9	1 49 17·4	·2215071
16	9 58 44·46	13 33 38·4	·4271838	0 19·3	149 14 3·1	1 49 8·0	·2215338
17	10 1 11·51	13 20 23·6	·4272546	0 17·8	149 40 16·0	1 48 58·3	·2215579
18	10 3 38·32	13 7 3·8	·4273149	0 16·3	150 6 28·8	1 48 48·2	·2215794
19	10 6 4·88	12 53 39·0	·4273647	0 14·8	150 32 41·4	1 48 37·7	·2215983
20	10 8 31·21	12 40 9·3	·4274040	0 13·3	150 58 53·9	1 48 26·9	·2216147
21	10 10 57·30	12 26 34·8	·4274327	0 11·8	151 25 6·3	1 48 15·7	·2216284
22	10 13 23·17	12 12 55·7	·4274509	0 10·3	151 51 18·5	1 48 4·1	·2216396
23	10 15 48·82	11 59 11·9	·4274585	0 8·8	152 17 30·7	1 47 52·1	·2216481
24	10 18 14·26	11 45 23·6	·4274557	0 7·3	152 43 42·9	1 47 39·7	·2216541
25	10 20 39·49	11 31 30·8	·4274422	0 5·7	153 9 54·9	1 47 27·0	·2216574
26	10 23 4·51	11 17 33·6	·4274181	0 4·2	153 36 7·0	1 47 13·9	·2216582
27	10 25 29·34	11 3 32·2	·4273833	0 2·7	154 2 19·1	1 47 0·5	·2216564
28	10 27 53·98	10 49 26·5	·4273378	{0 1·2 59·6}	154 28 31·1	1 46 46·6	·2216520
29	10 30 18·44	10 35 16·8	·4272814	23 58·1	154 54 43·2	1 46 32·4	·2216450
30	10 32 42·72	10 21 3·1	·4272141	23 56·5	155 20 55·3	1 46 17·8	·2216354
31	10 35 6·82	10 6 45·4	·4271359	23 55·0	155 47 7·5	1 46 2·9	·2216233
Sept. 1	10 37 30·75	9 52 24·0	·4270467	23 53·5	156 13 19·8	1 45 47·5	·2216085
2	10 39 54·52	9 37 58·8	·4269464	23 51·9	156 39 32·2	1 45 31·8	·2215912
3	10 42 18·12	9 23 30·1	·4268351	23 50·4	157 5 44·8	1 45 15·8	·2215713

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Month and Day.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
		North.				*North.*	
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
Sept. 3	10 42 18·12	9 23 30·1	·4268351	23·50·4	157 5 44·8	1 45 15·8	·2215713
4	10 44 41·56	9 8 57·8	·4267127	23 48·8	157 31 57·4	1 44 59·3	·2215488
5	10 47 4·85	8 54 22·1	·4265790	23 47·2	157 58 10·3	1 44 42·5	·2215237
6	10 49 27·99	8 39 43·2	·4264343	23 45·7	158 24 23·3	1 44 25·3	·2214960
7	10 51 50·98	8 25 1·0	·4262784	23 44·1	158 50 36·5	1 44 7·8	·2214657
8	10 54 13·83	8 10 15·8	·4261114	23 42·6	159 16 50·0	1 43 49·9	·2214329
9	10 56 36·54	7 55 27·5	·4259333	23 41·0	159 43 3·7	1 43 31·6	·2213975
10	10 58 59·13	7 40 36·3	·4257442	23 39·4	160 9 17·6	1 43 13·0	·2213595
11	11 1 21·58	7 25 42·3	·4255440	23 37·9	160 35 31·8	1 42 54·0	·2213189
12	11 3 43·91	7 10 45·6	·4253329	23 36·3	161 1 46·4	1 42 34·6	·2212758
13	11 6 6·13	6 55 46·2	·4251109	23 34·7	161 28 1·3	1 42 14·9	·2212301
14	11 8 28·24	6 40 44·3	·4248779	23 33·1	161 54 16·4	1 41 54·8	·2211818
15	11 10 50·24	6 25 39·9	·4246340	23 31·6	162 20 32·0	1 41 34·4	·2211309
16	11 13 12·15	6 10 33·1	·4243792	23 30·0	162 46 47·9	1 41 13·6	·2210775
17	11 15 33·97	5 55 24·0	·4241137	23 28·4	163 13 4·2	1 40 52·4	·2210215
18	11 17 55·71	5 40 12·7	·4238373	23 26·8	163 39 20·9	1 40 30·9	·2209629
19	11 20 17·37	5 24 59·2	·4235500	23 25·2	164 5 38·1	1 40 9·0	·2209017
20	11 22 38·97	5 9 43·7	·4232519	23 23·7	164 31 55·6	1 39 46·8	·2208380
21	11 25 0·51	4 54 26·1	·4229428	23 22·1	164 58 13·7	1 39 24·2	·2207717
22	11 27 21·99	4 39 6·7	·4226228	23 20·5	165 24 32·2	1 39 1·2	·2207029
23	11 29 43·44	4 23 45·4	·4222919	23 18·9	165 50 51·2	1 38 37·9	·2206315
24	11 32 4·84	4 8 22·5	·4219499	23 17·3	166 17 10·7	1 38 14·2	·2205575
25	11 34 26·21	3 52 57·8	·4215969	23 15·7	166 43 30·8	1 37 50·2	·2204809
26	11 36 47·56	3 37 31·6	·4212326	23 14·2	167 9 51·4	1 37 25·8	·2204018
27	11 39 8·88	3 22 4·0	·4208572	23 12·6	167 36 12·5	1 37 1·1	·2203201
28	11 41 30·19	3 6 35·0	·4204705	23 11·0	168 2 34·3	1 36 36·0	·2202359
29	11 43 51·50	2 51 4·7	·4200724	23 9·4	168 28 56·7	1 36 10·6	·2201491
30	11 46 12·81	2 35 33·2	·4196630	23 7·8	168 55 19·7	1 35 44·8	·2200598
Oct. 1	11 48 34·13	2 20 0·7	·4192421	23 6·2	169 21 43·4	1 35 18·7	·2199679
2	11 50 55·45	2 4 27·2	·4188097	23 4·7	169 48 7·7	1 34 52·2	·2198735
3	11 53 16·79	1 48 52·8	·4183659	23 3·1	170 14 32·8	1 34 25·4	·2197765
4	11 55 38·15	1 33 17·7	·4179105	23 1·5	170 40 58·5	1 33 58·2	·2196770
5	11 57 59·53	1 17 41·9	·4174435	22 59·9	171 7 25·0	1 33 30·7	·2195749
6	12 0 20·95	1 2 5·6	·4169650	22 58·3	171 33 52·2	1 33 2·8	·2194704
7	12 2 42·39	0 46 28·8	·4164750	22 56·7	172 0 20·2	1 32 34·6	·2193632
8	12 5 3·88	0 30 51·7	·4159735	22 55·2	172 26 49·0	1 32 6·1	·2192536
9	12 7 25·41	0 15 14·3	·4154605	22 53·6	172 53 18·6	1 31 37·2	·2191414
		South.					
10	12 9 46·99	0 0 23·3	·4149361	22 52·0	173 19 49·0	1 31 8·0	·2190268
11	12 12 8·62	0 16 0·9	·4144003	22 50·4	173 46 20·2	1 30 38·4	·2189096
12	12 14 30·32	0 31 38·5	·4138531	22 48·8	174 12 52·3	1 30 8·5	·2187898
13	12 16 52·09	0 47 16·0	·4132946	22 47·3	174 39 25·2	1 29 38·3	·2186676
14	12 19 13·93	1 2 53·3	·4127247	22 45·7	175 5 59·1	1 29 7·7	·2185429

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	h m s	South. ° ′ ″	°	h m	° ′ ″	North. ° ′ ″	°
Oct. 14	12 19 13·93	1 2 53·3	·4127247	22 45·7	175 5 59·1	1 29 7·7	·2185429
15	12 21 35·85	1 18 30·4	·4121436	22 44·1	175 32 33·8	1 28 36·8	·2184157
16	12 23 57·87	1 34 7·0	·4115511	22 42·5	175 59 9·5	1 28 5·5	·2182860
17	12 26 19·98	1 49 43·3	·4109475	22 41·0	176 25 46·1	1 27 33·9	·2181538
18	12 28 42·20	2 5 19·0	·4103325	22 39·4	176 52 23·6	1 27 2·0	·2180191
19	12 31 4·53	2 20 54·0	·4097063	22 37·8	177 19 2·1	1 26 29·7	·2178820
20	12 33 26·99	2 36 28·4	·4090688	22 36·3	177 45 41·7	1 25 57·1	·2177424
21	12 35 49·57	2 52 2·0	·4084198	22 34·7	178 12 22·2	1 25 24·2	·2176002
22	12 38 12·29	3 7 34·6	·4077595	22 33·1	178 39 3·8	1 24 50·9	·2174557
23	12 40 35·16	3 23 6·3	·4070878	22 31·6	179 5 46·5	1 24 17·3	·2173086
24	12 42 58·18	3 38 36·9	·4064046	22 30·0	179 32 30·2	1 23 43·4	·2171592
25	12 45 21·35	3 54 6·3	·4057097	22 28·5	179 59 15·1	1 23 9·2	·2170072
26	12 47 44·69	4 9 34·4	·4050033	22 26·9	180 26 1·0	1 22 34·6	·2168528
27	12 50 8·20	4 25 1·2	·4042851	22 25·4	180 52 48·1	1 21 59·7	·2166960
28	12 52 31·89	4 40 26·4	·4035552	22 23·8	181 19 36·4	1 21 24·5	·2165367
29	12 54 55·76	4 55 50·1	·4028134	22 22·3	181 46 25·9	1 20 49·0	·2163750
30	12 57 19·82	5 11 12·0	·4020597	22 20·7	182 13 16·6	1 20 13·1	·2162108
31	12 59 44·06	5 26 32·2	·4012941	22 19·2	182 40 8·5	1 19 36·9	·2160443
Nov. 1	13 2 8·50	5 41 50·4	·4005166	22 17·7	183 7 1·7	1 19 0·4	·2158753
2	13 4 33·14	5 57 6·6	·3997271	22 16·2	183 33 56·1	1 18 23·6	·2157039
3	13 6 57·98	6 12 20·6	·3989257	22 14·7	184 0 51·8	1 17 46·5	·2155301
4	13 9 23·03	6 27 32·4	·3981122	22 13·1	184 27 48·8	1 17 9·0	·2153539
5	13 11 48·29	6 42 41·8	·3972868	22 11·6	184 54 47·1	1 16 31·2	·2151753
6	13 14 13·77	6 57 48·8	·3964495	22 10·1	185 21 46·7	1 15 53·1	·2149943
7	13 16 39·46	7 12 53·2	·3956004	22 8·6	185 48 47·7	1 15 14·7	·2148109
8	13 19 5·39	7 27 54·9	·3947395	22 7·1	186 15 50·1	1 14 36·0	·2146252
9	13 21 31·55	7 42 53·8	·3938667	22 5·6	186 42 53·8	1 13 56·9	·2144371
10	13 23 57·94	7 57 49·8	·3929823	22 4·1	187 9 58·9	1 13 17·6	·2142467
11	13 26 24·58	8 12 42·8	·3920861	22 2·6	187 37 5·4	1 12 37·9	·2140539
12	13 28 51·47	8 27 32·7	·3911783	22 1·1	188 4 13·4	1 11 58·0	·2138587
13	13 31 18·61	8 42 19·5	·3902589	21 59·6	188 31 22·8	1 11 17·7	·2136613
14	13 33 46·02	8 57 2·9	·3893278	21 58·1	188 58 33·7	1 10 37·2	·2134614
15	13 36 13·70	9 11 43·0	·3883851	21 56·7	189 25 46·1	1 9 56·3	·2132593
16	13 38 41·66	9 26 19·6	·3874309	21 55·2	189 53 0·0	1 9 15·2	·2130548
17	13 41 9·90	9 40 52·6	·3864650	21 53·7	190 20 15·5	1 8 33·7	·2128480
18	13 43 38·43	9 55 22·0	·3854874	21 52·3	190 47 32·5	1 7 52·0	·2126390
19	13 46 7·26	10 9 47·6	·3844982	21 50·8	191 14 51·1	1 7 9·9	·2124276
20	13 48 36·40	10 24 9·3	·3834971	21 49·4	191 42 11·2	1 6 27·6	·2122139
21	13 51 5·84	10 38 27·0	·3824843	21 47·9	192 9 33·0	1 5 44·9	·2119979
22	13 53 35·60	10 52 40·6	·3814597	21 46·5	192 36 56·4	1 5 2·0	·2117796
23	13 56 5·69	11 6 50·1	·3804231	21 45·0	193 4 21·5	1 4 18·7	·2115591
24	13 58 36·10	11 20 55·2	·3793746	21 43·6	193 31 48·2	1 3 35·2	·2113363

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	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*South.* ° ′ ″		h m	° ′ ″	*North.* ° ′ ″	
Nov. 24	13 58 36·10	11 20 55·2	·3793746	21 43·6	193 31 48·2	1 3 35·2	·2113363
25	14 1 6·83	11 34 55·9	·3783140	21 42·2	193 59 16·7	1 2 51·4	·2111112
26	14 3 37·91	11 48 52·0	·3772413	21 40·8	194 26 46·8	1 2 7·3	·2108839
27	14 6 9·31	12 2 43·4	·3761565	21 39·4	194 54 18·7	1 1 22·9	·2106543
28	14 8 41·06	12 16 30·0	·3750594	21 38·0	195 21 52·3	1 0 38·2	·2104226
29	14 11 13·15	12 30 11·7	·3739500	21 36·6	195 49 27·6	0 59 53·3	·2101886
30	14 13 45·59	12 43 48·4	·3728284	21 35·2	196 17 4·8	0 59 8·1	·2099524
Dec. 1	14 16 18·37	12 57 19·9	·3716947	21 33·8	196 44 43·7	0 58 22·6	·2097140
2	14 18 51·51	13 10 46·2	·3705487	21 32·4	197 12 24·5	0 57 36·8	·2094734
3	14 21 24·99	13 24 7·0	·3693905	21 31·0	197 40 7·1	0 56 50·7	·2092307
4	14 23 58·83	13 37 22·3	·3682201	21 29·6	198 7 51·6	0 56 4·4	·2089858
5	14 26 33·02	13 50 32·0	·3670376	21 28·3	198 35 37·9	0 55 17·8	·2087388
6	14 29 7·57	14 3 36·0	·3658431	21 26·9	199 3 26·1	0 54 30·9	·2084896
7	14 31 42·48	14 16 34·0	·3646365	21 25·6	199 31 16·3	0 53 43·7	·2082382
8	14 34 17·76	14 29 26·2	·3634180	21 24·2	199 59 8·3	0 52 56·3	·2079848
9	14 36 53·40	14 42 12·2	·3621876	21 22·9	200 27 2·4	0 52 8·6	·2077291
10	14 39 29·41	14 54 52·0	·3609453	21 21·5	200 54 58·3	0 51 20·7	·2074716
11	14 42 5·80	15 7 25·6	·3596913	21 20·2	201 22 56·3	0 50 32·5	·2072118
12	14 44 42·57	15 19 52·7	·3584255	21 18·9	201 50 56·3	0 49 44·0	·2069500
13	14 47 19·71	15 32 13·3	·3571479	21 17·5	202 18 58·3	0 48 55·3	·2066861
14	14 49 57·25	15 44 27·3	·3558587	21 16·2	202 47 2·3	0 48 6·3	·2064201
15	14 52 35·18	15 56 34·6	·3545577	21 14·9	203 15 8·4	0 47 17·1	·2061521
16	14 55 13·50	16 8 35·1	·3532452	21 13·6	203 43 16·6	0 46 27·6	·2058820
17	14 57 52·22	16 20 28·6	·3519210	21 12·4	204 11 26·8	0 45 37·9	·2056100
18	15 0 31·34	16 32 15·1	·3505850	21 11·1	204 39 39·2	0 44 47·9	·2053359
19	15 3 10·87	16 43 54·4	·3492371	21 9·8	205 7 53·8	0 43 57·7	·2050598
20	15 5 50·80	16 55 26·4	·3478772	21 8·5	205 36 10·4	0 43 7·2	·2047817
21	15 8 31·14	17 6 51·0	·3465055	21 7·2	206 4 29·3	0 42 16·5	·2045017
22	15 11 11·90	17 18 8·1	·3451216	21 6·0	206 32 50·3	0 41 25·6	·2042197
23	15 13 53·07	17 29 17·5	·3437256	21 4·7	207 1 13·5	0 40 34·4	·2039357
24	15 16 34·64	17 40 19·2	·3423175	21 3·5	207 29 38·9	0 39 43·0	·2036498
25	15 19 16·63	17 51 13·0	·3408972	21 2·3	207 58 6·6	0 38 51·4	·2033621
26	15 21 59·03	18 1 58·8	·3394648	21 1·0	208 26 36·6	0 37 59·5	·2030724
27	15 24 41·84	18 12 36·5	·3380203	20 59·8	208 55 8·8	0 37 7·4	·2027808
28	15 27 25·05	18 23 6·0	·3365636	20 58·6	209 23 43·3	0 36 15·1	·2024874
29	15 30 8·67	18 33 27·1	·3350947	20 57·4	209 52 20·1	0 35 22·5	·2021921
30	15 32 52·69	18 43 39·7	·3336136	20 56·2	210 20 59·3	0 34 29·8	·2018950
31	15 35 37·11	18 53 43·8	·3321205	20 55·0	210 49 40·8	0 33 36·8	·2015960
32	15 38 21·93	19 3 39·1	·3306153	20 53·8	211 18 24·6	0 32 43·6	·2012952

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	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
		North.				*North.*	
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
Jan. 1	9 55 54·13	13 38 45·4	·6632728	15 8·8	138 53 2·7	0 50 30·0	·7278152
2	9 55 39·51	13 40 18·1	·6622275	15 4·6	138 57 46·2	0 50 34·9	·7278389
3	9 55 24·19	13 41 54·3	·6612000	15 0·4	139 2 29·6	0 50 39·9	·7278626
4	9 55 8·18	13 43 33·9	·6601909	14 56·2	139 7 12·9	0 50 44·9	·7278863
5	9 54 51·49	13 45 17·0	·6592006	14 52·0	139 11 56·3	0 50 49·8	·7279100
6	9 54 34·14	13 47 3·3	·6582299	14 47·8	139 16 39·6	0 50 54·8	·7279337
7	9 54 16·12	13 48 52·9	·6572793	14 43·5	139 21 22·8	0 50 59·7	·7279573
8	9 53 57·45	13 50 45·7	·6563493	14 39·3	139 26 6·1	0 51 4·6	·7279809
9	9 53 38·14	13 52 41·6	·6554406	14 35·0	139 30 49·3	0 51 9·6	·7280044
10	9 53 18·20	13 54 40·5	·6545537	14 30·8	139 35 32·5	0 51 14·5	·7280280
11	9 52 57·64	13 56 42·4	·6536892	14 26·5	139 40 15·6	0 51 19·4	·7280515
12	9 52 36·49	13 58 47·1	·6528476	14 22·2	139 44 58·7	0 51 24·3	·7280750
13	9 52 14·74	14 0 54·6	·6520294	14 17·9	139 49 41·8	0 51 29·2	·7280985
14	9 51 52·42	14 3 4·8	·6512352	14 13·6	139 54 24·9	0 51 34·1	·7281219
15	9 51 29·54	14 5 17·5	·6504655	14 9·3	139 59 7·9	0 51 39·0	·7281453
16	9 51 6·12	14 7 32·7	·6497206	14 5·0	140 3 50·9	0 51 43·9	·7281687
17	9 50 42·16	14 9 50·2	·6490011	14 0·6	140 8 33·8	0 51 48·7	·7281921
18	9 50 17·70	14 12 10·0	·6483075	13 56·3	140 13 16·8	0 51 53·6	·7282154
19	9 49 52·74	14 14 32·0	·6476400	13 51·9	140 17 59·7	0 51 58·5	·7282387
20	9 49 27·31	14 16 56·0	·6469992	13 47·6	140 22 42·5	0 52 3·3	·7282620
21	9 49 1·41	14 19 21·9	·6463855	13 43·2	140 27 25·4	0 52 8·2	·7282853
22	9 48 35·08	14 21 49·6	·6457991	13 38·8	140 32 8·2	0 52 13·0	·7283085
23	9 48 8·32	14 24 19·1	·6452405	13 34·5	140 36 50·9	0 52 17·8	·7283318
24	9 47 41·15	14 26 50·2	·6447099	13 30·1	140 41 33·7	0 52 22·7	·7283550
25	9 47 13·59	14 29 22·8	·6442077	13 25·7	140 46 16·4	0 52 27·5	·7283781
26	9 46 45·67	14 31 56·8	·6437341	13 21·3	140 50 59·1	0 52 32·3	·7284012
27	9 46 17·39	14 34 32·2	·6432896	13 16·9	140 55 41·7	0 52 37·1	·7284244
28	9 45 48·78	14 37 8·7	·6428743	13 12·5	141 0 24·3	0 52 41·9	·7284474
29	9 45 19·86	14 39 46·3	·6424886	13 8·1	141 5 6·9	0 52 46·7	·7284705
30	9 44 50·64	14 42 24·8	·6421328	13 3·6	141 9 49·5	0 52 51·5	·7284935
31	9 44 21·15	14 45 4·2	·6418070	12 59·2	141 14 32·0	0 52 56·3	·7285165
Feb. 1	9 43 51·41	14 47 44·3	·6415115	12 54·8	141 19 14·5	0 53 1·1	·7285395
2	9 43 21·43	14 50 25·0	·6412466	12 50·4	141 23 56·9	0 53 5·8	·7285625
3	9 42 51·24	14 53 6·2	·6410124	12 45·9	141 28 39·3	0 53 10·6	·7285854
4	9 42 20·87	14 55 47·8	·6408093	12 41·5	141 33 21·7	0 53 15·4	·7286083
5	9 41 50·33	14 58 29·6	·6406374	12 37·1	141 38 4·1	0 53 20·1	·7286312
6	9 41 19·65	15 1 11·6	·6404968	12 32·6	141 42 46·4	0 53 24·8	·7286541
7	9 40 48·85	15 3 53·6	·6403878	12 28·2	141 47 28·7	0 53 29·6	·7286769
8	9 40 17·96	15 6 35·5	·6403104	12 23·7	141 52 11·0	0 53 34·3	·7286997
9	9 39 46·99	15 9 17·1	·6402646	12 19·3	141 56 53·3	0 53 39·0	·7287225
10	9 39 15·98	15 11 58·3	·6402504	12 14·8	142 1 35·5	0 53 43·7	·7287452
11	9 38 44·94	15 14 39·0	·6402678	12 10·4	142 6 17·7	0 53 48·5	·7287679

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	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
		North.				*North.*	
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
Feb. 11	9 38 44·94	15 14 39·0	·6402678	12 10·4	142 6 17·7	0 53 48·5	·7287679
12	9 38 13·90	15 17 19·1	·6403168	12 5·9	142 10 59·8	0 53 53·2	·7287906
13	9 37 42·89	15 19 58·3	·6403974	12 1·5	142 15 41·9	0 53 57·9	·7288133
14	9 37 11·92	15 22 36·7	·6405094	11 57·0	142 20 24·0	0 54 2·6	·7288360
15	9 36 41·02	15 25 14·0	·6406527	11 52·6	142 25 6·1	0 54 7·2	·7288585
16	9 36 10·22	15 27 50·3	·6408272	11 48·1	142 29 48·1	0 54 11·9	·7288812
17	9 35 39·54	15 30 25·4	·6410327	11 43·7	142 34 30·1	0 54 16·6	·7289037
18	9 35 9·00	15 32 59·1	·6412691	11 39·3	142 39 12·1	0 54 21·2	·7289263
19	9 34 38·63	15 35 31·5	·6415362	11 34·8	142 43 54·0	0 54 25·9	·7289488
20	9 34 8·44	15 38 2·3	·6418336	11 30·4	142 48 36·0	0 54 30·6	·7289713
21	9 33 38·46	15 40 31·6	·6421613	11 26·0	142 53 17·8	0 54 35·2	·7289937
22	9 33 8·70	15 42 59·1	·6425189	11 21·6	142 57 59·7	0 54 39·8	·7290162
23	9 32 39·20	15 45 24·9	·6429062	11 17·1	143 2 41·5	0 54 44·5	·7290386
24	9 32 9·96	15 47 48·8	·6433228	11 12·7	143 7 23·3	0 54 49·1	·7290610
25	9 31 41·01	15 50 10·7	·6437684	11 8·3	143 12 5·1	0 54 53·7	·7290834
26	9 31 12·37	15 52 30·6	·6442428	11 3·9	143 16 46·8	0 54 58·3	·7291057
27	9 30 44·05	15 54 48·3	·6447457	10 59·5	143 21 28·5	0 55 2·9	·7291280
28	9 30 16·09	15 57 3·8	·6452768	10 55·1	143 26 10·1	0 55 7·6	·7291503
Mar. 1	9 29 48·49	15 59 17·0	·6458357	10 50·8	143 30 51·8	0 55 12·1	·7291726
2	9 29 21·27	16 1 27·8	·6464222	10 46·4	143 35 33·4	0 55 16·7	·7291948
3	9 28 54·46	16 3 36·2	·6470358	10 42·0	143 40 15·0	0 55 21·3	·7292170
4	9 28 28·06	16 5 42·0	·6476763	10 37·6	143 44 56·5	0 55 25·9	·7292392
5	9 28 2·11	16 7 45·3	·6483431	10 33·3	143 49 38·1	0 55 30·5	·7292614
6	9 27 36·61	16 9 45·9	·6490359	10 28·9	143 54 19·6	0 55 35·0	·7292835
7	9 27 11·59	16 11 43·7	·6497543	10 24·6	143 59 1·0	0 55 39·6	·7293056
8	9 26 47·07	16 13 38·8	·6504978	10 20·2	144 3 42·5	0 55 44·1	·7293277
9	9 26 23·05	16 15 31·0	·6512661	10 15·9	144 8 23·9	0 55 48·7	·7293497
10	9 25 59·56	16 17 20·2	·6520585	10 11·6	144 13 5·3	0 55 53·2	·7293717
11	9 25 36·62	16 19 6·5	·6528746	10 7·3	144 17 46·6	0 55 57·7	·7293937
12	9 25 14·23	16 20 49·7	·6537139	10 3·0	144 22 27·9	0 56 2·3	·7294157
13	9 24 52·41	16 22 29·8	·6545759	9 58·7	144 27 9·2	0 56 6·8	·7294376
14	9 24 31·18	16 24 6·8	·6554600	9 54·4	144 31 50·5	0 56 11·3	·7294595
15	9 24 10·55	16 25 40·6	·6563657	9 50·2	144 36 31·7	0 56 15·8	·7294814
16	9 23 50·54	16 27 11·1	·6572924	9 45·9	144 41 13·0	0 56 20·3	·7295033
17	9 23 31·16	16 28 38·4	·6582395	9 41·7	144 45 54·1	0 56 24·8	·7295251
18	9 23 12·40	16 30 2·3	·6592065	9 37·4	144 50 35·3	0 56 29·3	·7295469
19	9 22 54·30	16 31 22·9	·6601928	9 33·2	144 55 16·4	0 56 33·7	·7295687
20	9 22 36·85	16 32 40·2	·6611979	9 29·0	144 59 57·5	0 56 38·2	·7295904
21	9 22 20·07	16 33 54·1	·6622211	9 24·8	145 4 38·6	0 56 42·7	·7296121
22	9 22 3·96	16 35 4·5	·6632619	9 20·6	145 9 19·6	0 56 47·1	·7296338
23	9 21 48·53	16 36 11·6	·6643197	9 16·4	145 14 0·6	0 56 51·6	·7296555
24	9 21 33·79	16 37 15·2	·6653941	9 12·2	145 18 41·6	0 56 56·0	·7296772

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	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
		North.				*North.*	
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
Mar. 24	9 21 33·79	16 37 15·2	·6653941	9 12·2	145 18 41·6	0 56 56·0	·7296772
25	9 21 19·74	16 38 15·4	·6664844	9 8·0	145 23 22·6	0 57 0·5	·7296988
26	9 21 6·39	16 39 12·1	·6675902	9 3·9	145 28 3·5	0 57 4·9	·7297203
27	9 20 53·74	16 40 5·4	·6687108	8 59·8	145 32 44·4	0 57 9·3	·7297419
28	9 20 41·80	16 40 55·3	·6698459	8 55·6	145 37 25·3	0 57 13·7	·7297634
29	9 20 30·58	16 41 41·7	·6709948	8 51·5	145 42 6·1	0 57 18·1	·7297849
30	9 20 20·07	16 42 24·5	·6721570	8 47·4	145 46 46·9	0 57 22·6	·7298063
31	9 20 10·29	16 43 3·9	·6733321	8 43·3	145 51 27·7	0 57 26·9	·7298278
Apr. 1	9 20 1·24	16 43 39·8	·6745195	8 39·2	145 56 8·5	0 57 31·3	·7298492
2	9 19 52·92	16 44 12·1	·6757187	8 35·2	146 0 49·3	0 57 35·7	·7298705
3	9 19 45·34	16 44 40·9	·6769293	8 31·1	146 5 30·0	0 57 40·1	·7298919
4	9 19 38·50	16 45 6·2	·6781505	8 27·1	146 10 10·7	0 57 44·5	·7299132
5	9 19 32·40	16 45 27·9	·6793821	8 23·1	146 14 51·3	0 57 48·8	·7299345
6	9 19 27·05	16 45 46·1	·6806234	8 19·0	146 19 32·0	0 57 53·2	·7299557
7	9 19 22·45	16 46 0·8	·6818739	8 15·0	146 24 12·6	0 57 57·5	·7299769
8	9 19 18·60	16 46 11·9	·6831332	8 11·1	146 28 53·2	0 58 1·9	·7299981
9	9 19 15·50	16 46 19·5	·6844006	8 7·1	146 33 33·7	0 58 6·2	·7300193
10	9 19 13·14	16 46 23·6	·6856757	8 3·1	146 38 14·3	0 58 10·5	·7300405
11	9 19 11·55	16 46 24·1	·6869579	7 59·2	146 42 54·8	0 58 14·8	·7300616
12	9 19 10·70	16 46 21·2	·6882467	7 55·2	146 47 35·2	0 58 19·2	·7300827
13	9 19 10·60	16 46 14·7	·6895416	7 51·3	146 52 15·7	0 58 23·5	·7301037
14	9 19 11·26	16 46 4·7	·6908420	7 47·4	146 56 56·1	0 58 27·8	·7301248
15	9 19 12·66	16 45 51·3	·6921475	7 43·5	147 1 36·5	0 58 32·1	·7301458
16	9 19 14·81	16 45 34·4	·6934575	7 39·6	147 6 16·9	0 58 36·3	·7301667
17	9 19 17·69	16 45 14·0	·6947717	7 35·7	147 10 57·2	0 58 40·6	·7301877
18	9 19 21·32	16 44 50·3	·6960896	7 31·8	147 15 37·6	0 58 44·9	·7302086
19	9 19 25·68	16 44 23·1	·6974106	7 28·0	147 20 17·9	0 58 49·2	·7302295
20	9 19 30·77	16 43 52·5	·6987344	7 24·1	147 24 58·1	0 58 53·4	·7302504
21	9 19 36·58	16 43 18·6	·7000605	7 20·3	147 29 38·4	0 58 57·7	·7302712
22	9 19 43·12	16 42 41·3	·7013886	7 16·5	147 34 18·6	0 59 1·9	·7302920
23	9 19 50·37	16 42 0·7	·7027182	7 12·7	147 38 58·8	0 59 6·1	·7303128
24	9 19 58·34	16 41 16·9	·7040490	7 8·9	147 43 39·0	0 59 10·4	·7303335
25	9 20 7·01	16 40 29·7	·7053806	7 5·1	147 48 19·1	0 59 14·6	·7303542
26	9 20 16·39	16 39 39·3	·7067124	7 1·3	147 52 59·2	0 59 18·8	·7303749
27	9 20 26·46	16 38 45·7	·7080443	6 57·5	147 57 39·3	0 59 23·0	·7303956
28	9 20 37·23	16 37 48·9	·7093760	6 53·8	148 2 19·4	0 59 27·2	·7304162
29	9 20 48·68	16 36 48·8	·7107072	6 50·0	148 6 59·4	0 59 31·4	·7304368
30	9 21 0·82	16 35 45·6	·7120375	6 46·3	148 11 39·5	0 59 35·6	·7304574
May 1	9 21 13·64	16 34 39·1	·7133665	6 42·6	148 16 19·5	0 59 39·8	·7304779
2	9 21 27·13	16 33 29·4	·7146938	6 38·9	148 20 59·5	0 59 44·0	·7304984
3	9 21 41·29	16 32 16·6	·7160192	6 35·2	148 25 39·4	0 59 48·1	·7305189
4	9 21 56·11	16 31 0·6	·7173422	6 31·5	148 30 19·3	0 59 52·3	·7305394

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	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
		North.				*North.*	
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
May 4	9 21 56·11	16 31 0·6	·7173422	6 31·5	148 30 19·3	0 59 52·3	·7305394
5	9 22 11·60	16 29 41·4	·7186627	6 27·9	148 34 59·2	0 59 56·4	·7305598
6	9 22 27·73	16 28 19·2	·7199802	6 24·2	148 39 39·1	1 0 0·6	·7305802
7	9 22 44·52	16 26 53·9	·7212945	6 20·5	148 44 19·0	1 0 4·7	·7306006
8	9 23 1·95	16 25 25·5	·7226052	6 16·9	148 48 58·8	1 0 8·9	·7306209
9	9 23 20·02	16 23 54·2	·7239121	6 13·3	148 53 38·6	1 0 13·0	·7306412
10	9 23 38·72	16 22 19·7	·7252146	6 9·7	148 58 18·4	1 0 17·1	·7306615
11	9 23 58·05	16 20 42·3	·7265127	6 6·0	149 2 58·1	1 0 21·2	·7306818
12	9 24 17·98	16 19 1·9	·7278059	6 2·4	149 7 37·9	1 0 25·3	·7307020
13	9 24 38·53	16 17 18·6	·7290939	5 58·8	149 12 17·6	1 0 29·4	·7307222
14	9 24 59·68	16 15 32·3	·7303764	5 55·3	149 16 57·2	1 0 33·5	·7307424
15	9 25 21·42	16 13 43·1	·7316532	5 51·7	149 21 36·9	1 0 37·6	·7307625
16	9 25 43·75	16 11 51·1	·7329241	5 48·1	149 26 16·5	1 0 41·7	·7307826
17	9 26 6·66	16 9 56·2	·7341887	5 44·6	149 30 56·1	1 0 45·7	·7308027
18	9 26 30·14	16 7 58·4	·7354469	5 41·0	149 35 35·7	1 0 49·8	·7308227
19	9 26 54·18	16 5 57·9	·7366985	5 37·5	149 40 15·3	1 0 53·8	·7308427
20	9 27 18·78	16 3 54·6	·7379432	5 34·0	149 44 54·8	1 0 57·9	·7308627
21	9 27 43·93	16 1 48·6	·7391808	5 30·5	149 49 34·3	1 1 1·9	·7308827
22	9 28 9·62	15 59 39·9	·7404113	5 27·0	149 54 13·8	1 1 5·9	·7309026
23	9 28 35·84	15 57 28·5	·7416343	5 23·5	149 58 53·3	1 1 10·0	·7309225
24	9 29 2·59	15 55 14·4	·7428497	5 20·0	150 3 32·6	1 1 14·0	·7309424
25	9 29 29·86	15 52 57·6	·7440574	5 16·5	150 8 12·1	1 1 18·0	·7309622
26	9 29 57·64	15 50 38·2	·7452573	5 13·1	150 12 51·5	1 1 22·0	·7309820
27	9 30 25·92	15 48 16·2	·7464490	5 9·6	150 17 30·9	1 1 26·0	·7310018
28	9 30 54·70	15 45 51·5	·7476326	5 6·2	150 22 10·2	1 1 30·0	·7310216
29	9 31 23·97	15 43 24·3	·7488076	5 2·7	150 26 49·5	1 1 34·0	·7310413
30	9 31 53·73	15 40 54·5	·7499741	4 59·3	150 31 28·8	1 1 37·9	·7310610
31	9 32 23·97	15 38 22·2	·7511317	4 55·8	150 36 8·1	1 1 41·9	·7310807
June 1	9 32 54·69	15 35 47·3	·7522804	4 52·4	150 40 47·3	1 1 45·9	·7311003
2	9 33 25·87	15 33 9·9	·7534199	4 49·0	150 45 26·5	1 1 49·8	·7311199
3	9 33 57·52	15 30 30·0	·7545501	4 45·6	150 50 5·7	1 1 53·7	·7311395
4	9 34 29·63	15 27 47·6	·7556709	4 42·2	150 54 44·9	1 1 57·7	·7311590
5	9 35 2·18	15 25 2·8	·7567821	4 38·8	150 59 24·1	1 2 1·6	·7311785
6	9 35 35·17	15 22 15·5	·7578835	4 35·4	151 4 3·2	1 2 5·5	·7311980
7	9 36 8·60	15 19 25·8	·7589751	4 32·0	151 8 42·3	1 2 9·5	·7312175
8	9 36 42·45	15 16 33·7	·7600565	4 28·7	151 13 21·4	1 2 13·4	·7312369
9	9 37 16·72	15 13 39·2	·7611278	4 25·3	151 18 0·4	1 2 17·3	·7312563
10	9 37 51·41	15 10 42·4	·7621887	4 21·9	151 22 39·5	1 2 21·2	·7312757
11	9 38 26·50	15 7 43·2	·7632391	4 18·6	151 27 18·5	1 2 25·0	·7312950
12	9 39 1·99	15 4 41·8	·7642789	4 15·2	151 31 57·4	1 2 28·9	·7313143
13	9 39 37·87	15 1 38·1	·7653079	4 11·9	151 36 36·4	1 2 32·8	·7313336
14	9 40 14·14	14 58 32·2	·7663259	4 8·6	151 41 15·3	1 2 36·7	·7313528

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	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*North.* ° ′ ″	°	h m	° ′ ″	*North.* ° ′ ″	°
June 14	9 40 14·14	14 58 32·2	·7663259	4 8·6	151 41 15·3	1 2 36·7	·7313528
15	9 40 50·78	14 55 24·1	·7673330	4 5·3	151 45 54·2	1 2 40·5	·7313720
16	9 41 27·80	14 52 13·9	·7683291	4 1·9	151 50 33·1	1 2 44·4	·7313912
17	9 42 5·17	14 49 1·4	·7693140	3 58·6	151 55 12·0	1 2 48·2	·7314104
18	9 42 42·90	14 45 46·8	·7702876	3 55·3	151 59 50·8	1 2 52·0	·7314295
19	9 43 20·97	14 42 30·1	·7712499	3 52·0	152 4 29·6	1 2 55·9	·7314486
20	9 43 59·39	14 39 11·2	·7722008	3 48·7	152 9 8·4	1 2 59·7	·7314677
21	9 44 38·14	14 35 50·3	·7731402	3 45·5	152 13 47·2	1 3 3·5	·7314867
22	9 45 17·22	14 32 27·3	·7740682	3 42·2	152 18 25·9	1 3 7·3	·7315057
23	9 45 56·62	14 29 2·3	·7749845	3 38·9	152 23 4·6	1 3 11·1	·7315247
24	9 46 36·34	14 25 35·3	·7758892	3 35·6	152 27 43·3	1 3 14·9	·7315436
25	9 47 16·37	14 22 6·3	·7767822	3 32·4	152 32 22·0	1 3 18·7	·7315625
26	9 47 56·71	14 18 35·3	·7776635	3 29·1	152 37 0·6	1 3 22·5	·7315814
27	9 48 37·34	14 15 2·3	·7785330	3 25·8	152 41 39·2	1 3 26·2	·7316003
28	9 49 18·28	14 11 27·5	·7793905	3 22·6	152 46 17·8	1 3 30·0	·7316191
29	9 49 59·50	14 7 50·6	·7802361	3 19·3	152 50 56·4	1 3 33·8	·7316379
30	9 50 41·01	14 4 11·9	·7810696	3 16·1	152 55 34·9	1 3 37·5	·7316567
July 1	9 51 22·80	14 0 31·3	·7818910	3 12·9	153 0 13·5	1 3 41·3	·7316754
2	9 52 4·87	13 56 48·8	·7827002	3 9·6	153 4 51·9	1 3 45·0	·7316941
3	9 52 47·20	13 53 4·4	·7834971	3 6·4	153 9 30·4	1 3 48·7	·7317128
4	9 53 29·80	13 49 18·2	·7842816	3 3·2	153 14 8·9	1 3 52·5	·7317314
5	9 54 12·65	13 45 30·3	·7850535	3 0·0	153 18 47·3	1 3 56·2	·7317500
6	9 54 55·76	13 41 40·5	·7858129	2 56·7	153 23 25·7	1 3 59·9	·7317686
7	9 55 39·11	13 37 49·0	·7865595	2 53·5	153 28 4·1	1 4 3·6	·7317871
8	9 56 22·70	13 33 55·7	·7872934	2 50·3	153 32 42·4	1 4 7·3	·7318056
9	9 57 6·53	13 30 0·8	·7880145	2 47·1	153 37 20·8	1 4 11·0	·7318241
10	9 57 50·58	13 26 4·2	·7887227	2 43·9	153 41 59·1	1 4 14·6	·7318426
11	9 58 34·85	13 22 5·9	·7894179	2 40·7	153 46 37·3	1 4 18·3	·7318610
12	9 59 19·34	13 18 6·0	·7901003	2 37·5	153 51 15·6	1 4 22·0	·7318794
13	10 0 4·04	13 14 4·5	·7907696	2 34·3	153 55 53·8	1 4 25·6	·7318978
14	10 0 48·93	13 10 1·5	·7914259	2 31·2	154 0 32·0	1 4 29·3	·7319161
15	10 1 34·03	13 5 56·9	·7920692	2 28·0	154 5 10·2	1 4 32·9	·7319344
16	10 2 19·32	13 1 50·8	·7926994	2 24·8	154 9 48·4	1 4 36·6	·7319527
17	10 3 4·79	12 57 43·2	·7933164	2 21·6	154 14 26·5	1 4 40·2	·7319709
18	10 3 50·44	12 53 34·2	·7939204	2 18·4	154 19 4·6	1 4 43·8	·7319891
19	10 4 36·27	12 49 23·7	·7945113	2 15·2	154 23 42·7	1 4 47·4	·7320073
20	10 5 22·27	12 45 11·8	·7950890	2 12·1	154 28 20·8	1 4 51·0	·7320254
21	10 6 8·44	12 40 58·5	·7956535	2 8·9	154 32 58·8	1 4 54·6	·7320435
22	10 6 54·77	12 36 43·8	·7962048	2 5·8	154 37 36·8	1 4 58·2	·7320616
23	10 7 41·25	12 32 27·8	·7967429	2 2·6	154 42 14·8	1 5 1·8	·7320797
24	10 8 27·89	12 28 10·4	·7972677	1 59·4	154 46 52·8	1 5 5·4	·7320977
25	10 9 14·68	12 23 51·7	·7977794	1 56·3	154 51 30·7	1 5 9·0	·7321157

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	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*North.* ° ′ ″	0	h m	° ′ ″	*North.* ° ′ ″	0
July 25	10 9 14·68	12 23 51·7	·7977794	1 56·3	154 51 30·7	1 5 9·0	·7321157
26	10 10 1·61	12 19 31·7	·7982777	1 53·1	154 56 8·6	1 5 12·5	·7321337
27	10 10 48·68	12 15 10·4	·7987628	1 50·0	155 0 46·5	1 5 16·1	·7321516
28	10 11 35·89	12 10 47·8	·7992344	1 46·8	155 5 24·4	1 5 19·6	·7321695
29	10 12 23·23	12 6 24·0	·7996926	1 43·7	155 10 2·2	1 5 23·2	·7321874
30	10 13 10·70	12 1 59·0	·8001373	1 40·5	155 14 40·1	1 5 26·7	·7322052
31	10 13 58·29	11 57 32·8	·8005685	1 37·4	155 19 17·9	1 5 30·2	·7322230
Aug. 1	10 14 46·01	11 53 5·4	·8009860	1 34·3	155 23 55·6	1 5 33·7	·7322408
2	10 15 33·83	11 48 36·9	·8013899	1 31·1	155 28 33·4	1 5 37·2	·7322585
3	10 16 21·77	11 44 7·3	·8017802	1 28·0	155 33 11·1	1 5 40·7	·7322762
4	10 17 9·80	11 39 36·6	·8021567	1 24·8	155 37 48·8	1 5 44·2	·7322939
5	10 17 57·94	11 35 4·8	·8025195	1 21·7	155 42 26·5	1 5 47·7	·7323115
6	10 18 46·17	11 30 32·0	·8028685	1 18·6	155 47 4·1	1 5 51·2	·7323291
7	10 19 34·49	11 25 58·3	·8032036	1 15·4	155 51 41·8	1 5 54·7	·7323467
8	10 20 22·90	11 21 23·5	·8035249	1 12·3	155 56 19·4	1 5 58·1	·7323642
9	10 21 11·38	11 16 47·9	·8038323	1 9·2	156 0 57·0	1 6 1·6	·7323818
10	10 21 59·93	11 12 11·3	·8041259	1 6·1	156 5 34·5	1 6 5·0	·7323992
11	10 22 48·56	11 7 33·9	·8044055	1 2·9	156 10 12·1	1 6 8·5	·7324167
12	10 23 37·25	11 2 55·6	·8046712	0 59·8	156 14 49·6	1 6 11·9	·7324341
13	10 24 26·00	10 58 16·6	·8049230	0 56·7	156 19 27·1	1 6 15·3	·7324515
14	10 25 14·80	10 53 36·7	·8051609	0 53·6	156 24 4·5	1 6 18·8	·7324689
15	10 26 3·65	10 48 56·1	·8053848	0 50·5	156 28 42·0	1 6 22·2	·7324862
16	10 26 52·54	10 44 14·8	·8055949	0 47·3	156 33 19·4	1 6 25·6	·7325035
17	10 27 41·48	10 39 32·7	·8057911	0 44·2	156 37 56·8	1 6 29·0	·7325208
18	10 28 30·45	10 34 50·0	·8059734	0 41·1	156 42 34·2	1 6 32·4	·7325380
19	10 29 19·46	10 30 6·6	·8061418	0 38·0	156 47 11·5	1 6 35·7	·7325552
20	10 30 8·50	10 25 22·5	·8062963	0 34·9	156 51 48·9	1 6 39·1	·7325724
21	10 30 57·56	10 20 37·9	·8064369	0 31·7	156 56 26·2	1 6 42·5	·7325895
22	10 31 46·64	10 15 52·7	·8065636	0 28·6	157 1 3·4	1 6 45·9	·7326066
23	10 32 35·74	10 11 6·9	·8066763	0 25·5	157 5 40·7	1 6 49·2	·7326237
24	10 33 24·86	10 6 20·6	·8067752	0 22·4	157 10 17·9	1 6 52·5	·7326407
25	10 34 13·99	10 1 33·8	·8068600	0 19·3	157 14 55·1	1 6 55·9	·7326578
26	10 35 3·12	9 56 46·5	·8069309	0 16·1	157 19 32·3	1 6 59·2	·7326747
27	10 35 52·26	9 51 58·8	·8069877	0 13·0	157 24 9·5	1 7 2·5	·7326917
28	10 36 41·40	9 47 10·6	·8070304	0 9·9	157 28 46·6	1 7 5·9	·7327086
29	10 37 30·54	9 42 22·1	·8070591	0 6·8	157 33 23·8	1 7 9·2	·7327255
30	10 38 19·67	9 37 33·2	·8070736	0 3·7	157 38 0·9	1 7 12·5	·7327423
31	10 39 8·78	9 32 43·9	·8070739	{0 0·6 / 23 57·5}	157 42 37·9	1 7 15·8	·7327592
Sept. 1	10 39 57·88	9 27 54·3	·8070600	23 54·3	157 47 15·0	1 7 19·0	·7327759
2	10 40 46·96	9 23 4·5	·8070319	23 51·2	157 51 52·0	1 7 22·3	·7327927
3	10 41 36·00	9 18 14·4	·8069895	23 48·1	157 56 29·0	1 7 25·6	·7328094
4	10 42 25·02	9 13 24·2	·8069329	23 45·0	158 1 6·0	1 7 28·9	·7328261

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	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*North.* ° ′ ″	°	h m	° ′ ″	*North.* ° ′ ″	°
Sept. 4	10 42 25·02	9 13 24·2	·8069329	23 45·0	158 1 6·0	1 7 28·9	·7328261
5	10 43 14·00	9 8 33·8	·8068620	23 41·9	158 5 43·0	1 7 32·1	·7328428
6	10 44 2·93	9 3 43·3	·8067768	23 38·7	158 10 19·9	1 7 35·4	·7328594
7	10 44 51·82	8 58 52·7	·8066774	23 35·6	158 14 56·9	1 7 38·6	·7328760
8	10 45 40·66	8 54 2·1	·8065636	23 32·5	158 19 33·8	1 7 41·8	·7328926
9	10 46 29·44	8 49 11·4	·8064357	23 29·4	158 24 10·7	1 7 45·1	·7329091
10	10 47 18·16	8 44 20·8	·8062935	23 26·2	158 28 47·5	1 7 48·3	·7329256
11	10 48 6·81	8 39 30·2	·8061371	23 23·1	158 33 24·4	1 7 51·5	·7329421
12	10 48 55·40	8 34 39·7	·8059664	23 20·0	158 38 1·2	1 7 54·7	·7329585
13	10 49 43·91	8 29 49·4	·8057816	23 16·9	158 42 38·0	1 7 57·9	·7329749
14	10 50 32·34	8 24 59·2	·8055826	23 13·7	158 47 14·8	1 8 1·1	·7329912
15	10 51 20·69	8 20 9·1	·8053695	23 10·6	158 51 51·5	1 8 4·3	·7330076
16	10 52 8·95	8 15 19·3	·8051422	23 7·5	158 56 28·3	1 8 7·4	·7330239
17	10 52 57·12	8 10 29·7	·8049008	23 4·4	159 1 5·0	1 8 10·6	·7330401
18	10 53 45·20	8 5 40·4	·8046454	23 1·2	159 5 41·7	1 8 13·7	·7330564
19	10 54 33·17	8 0 51·4	·8043758	22 58·1	159 10 18·3	1 8 16·9	·7330726
20	10 55 21·05	7 56 2·7	·8040921	22 54·9	159 14 55·0	1 8 20·0	·7330887
21	10 56 8·82	7 51 14·4	·8037943	22 51·8	159 19 31·6	1 8 23·2	·7331049
22	10 56 56·48	7 46 26·5	·8034824	22 48·6	159 24 8·2	1 8 26·3	·7331210
23	10 57 44·03	7 41 39·0	·8031564	22 45·5	159 28 44·8	1 8 29·4	·7331371
24	10 58 31·46	7 36 52·0	·8028163	22 42·3	159 33 21·3	1 8 32·5	·7331531
25	10 59 18·77	7 32 5·4	·8024620	22 39·2	159 37 57·9	1 8 35·6	·7331692
26	11 0 5·95	7 27 19·4	·8020936	22 36·0	159 42 34·4	1 8 38·7	·7331851
27	11 0 53·00	7 22 33·9	·8017111	22 32·9	159 47 10·9	1 8 41·8	·7332011
28	11 1 39·91	7 17 49·1	·8013143	22 29·7	159 51 47·4	1 8 44·9	·7332170
29	11 2 26·69	7 13 4·9	·8009033	22 26·6	159 56 23·9	1 8 48·0	·7332329
30	11 3 13·32	7 8 21·4	·8004782	22 23·4	160 1 0·3	1 8 51·0	·7332487
Oct. 1	11 3 59·80	7 3 38·6	·8000389	22 20·2	160 5 36·8	1 8 54·1	·7332645
2	11 4 46·12	6 58 56·6	·7995854	22 17·1	160 10 13·2	1 8 57·1	·7332803
3	11 5 32·29	6 54 15·4	·7991177	22 13·9	160 14 49·6	1 9 0·2	·7332960
4	11 6 18·28	6 49 35·1	·7986359	22 10·7	160 19 25·9	1 9 3·2	·7333117
5	11 7 4·10	6 44 55·7	·7981399	22 7·6	160 24 2·3	1 9 6·2	·7333274
6	11 7 49·74	6 40 17·2	·7976298	22 4·4	160 28 38·6	1 9 9·3	·7333431
7	11 8 35·20	6 35 39·8	·7971057	22 1·2	160 33 15·0	1 9 12·3	·7333587
8	11 9 20·47	6 31 3·3	·7965676	21 58·0	160 37 51·3	1 9 15·3	·7333742
9	11 10 5·54	6 26 27·9	·7960156	21 54·8	160 42 27·5	1 9 18·3	·7333898
10	11 10 50·42	6 21 53·6	·7954496	21 51·6	160 47 3·8	1 9 21·3	·7334053
11	11 11 35·09	6 17 20·4	·7948698	21 48·4	160 51 40·0	1 9 24·2	·7334208
12	11 12 19·55	6 12 48·4	·7942762	21 45·3	160 56 16·2	1 9 27·2	·7334362
13	11 13 3·80	6 8 17·6	·7936689	21 42·1	161 0 52·4	1 9 30·2	·7334516
14	11 13 47·83	6 3 48·1	·7930479	21 38·8	161 5 28·6	1 9 33·1	·7334670
15	11 14 31·64	5 59 19·8	·7924133	21 35·6	161 10 4·8	1 9 36·1	·7334824

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	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*North.* ° ′ ″	°	h m	° ′ ″	*North.* ° ′ ″	°
Oct. 15	11 14 31·64	5 59 19·8	·7924133	21 35·6	161 10 4·8	1 9 36·1	·7334824
16	11 15 15·22	5 54 52·9	·7917650	21 32·4	161 14 40·9	1 9 39·0	·7334977
17	11 15 58·57	5 50 27·4	·7911032	21 29·2	161 19 17·1	1 9 41·9	·7335130
18	11 16 41·68	5 46 3·3	·7904279	21 26·0	161 23 53·2	1 9 44·9	·7335282
19	11 17 24·55	5 41 40·6	·7897392	21 22·8	161 28 29·3	1 9 47·8	·7335434
20	11 18 7·17	5 37 19·4	·7890369	21 19·6	161 33 5·3	1 9 50·7	·7335586
21	11 18 49·55	5 32 59·7	·7883213	21 16·3	161 37 41·4	1 9 53·6	·7335737
22	11 19 31·66	5 28 41·6	·7875922	21 13·1	161 42 17·4	1 9 56·5	·7335888
23	11 20 13·51	5 24 25·0	·7868498	21 9·8	161 46 53·4	1 9 59·4	·7336039
24	11 20 55·10	5 20 10·1	·7860940	21 6·6	161 51 29·4	1 10 2·3	·7336189
25	11 21 36·41	5 15 56·8	·7853250	21 3·3	161 56 5·4	1 10 5·1	·7336339
26	11 22 17·45	5 11 45·3	·7845427	21 0·1	162 0 41·4	1 10 8·0	·7336488
27	11 22 58·20	5 7 35·5	·7837471	20 56·8	162 5 17·3	1 10 10·9	·7336637
28	11 23 38·66	5 3 27·6	·7829384	20 53·5	162 9 53·2	1 10 13·7	·7336786
29	11 24 18·83	4 59 21·6	·7821165	20 50·3	162 14 29·2	1 10 16·6	·7336935
30	11 24 58·69	4 55 17·5	·7812816	20 47·0	162 19 5·1	1 10 19·4	·7337083
31	11 25 38·25	4 51 15·4	·7804336	20 43·7	162 23 40·9	1 10 22·2	·7337231
Nov. 1	11 26 17·49	4 47 15·4	·7795728	20 40·4	162 28 16·8	1 10 25·0	·7337378
2	11 26 56·40	4 43 17·3	·7786992	20 37·1	162 32 52·6	1 10 27·9	·7337525
3	11 27 34·99	4 39 21·4	·7778129	20 33·9	162 37 28·5	1 10 30·7	·7337672
4	11 28 13·24	4 35 27·6	·7769140	20 30·6	162 42 4·3	1 10 33·5	·7337818
5	11 28 51·14	4 31 35·9	·7760026	20 27·3	162 46 40·1	1 10 36·2	·7337964
6	11 29 28·70	4 27 46·5	·7750788	20 24·0	162 51 15·9	1 10 39·0	·7338110
7	11 30 5·90	4 23 59·4	·7741427	20 20·6	162 55 51·6	1 10 41·8	·7338255
8	11 30 42·74	4 20 14·7	·7731946	20 17·3	163 0 27·4	1 10 44·6	·7338400
9	11 31 19·21	4 16 32·3	·7722344	20 14·0	163 5 3·1	1 10 47·3	·7338545
10	11 31 55·31	4 12 52·4	·7712624	20 10·6	163 9 38·8	1 10 50·1	·7338690
11	11 32 31·03	4 9 15·0	·7702786	20 7·3	163 14 14·5	1 10 52·8	·7338834
12	11 33 6·37	4 5 40·1	·7692831	20 3·9	163 18 50·2	1 10 55·5	·7338978
13	11 33 41·32	4 2 7·7	·7682762	20 0·5	163 23 25·8	1 10 58·3	·7339121
14	11 34 15·88	3 58 37·9	·7672578	19 57·2	163 28 1·5	1 11 1·0	·7339264
15	11 34 50·03	3 55 10·8	·7662282	19 53·8	163 32 37·1	1 11 3·7	·7339407
16	11 35 23·78	3 51 46·3	·7651875	19 50·4	163 37 12·7	1 11 6·4	·7339550
17	11 35 57·12	3 48 24·6	·7641357	19 47·0	163 41 48·3	1 11 9·1	·7339692
18	11 36 30·04	3 45 5·6	·7630730	19 43·7	163 46 23·9	1 11 11·8	·7339834
19	11 37 2·53	3 41 49·3	·7619995	19 40·3	163 50 59·4	1 11 14·5	·7339975
20	11 37 34·60	3 38 36·0	·7609154	19 36·8	163 55 35·0	1 11 17·1	·7340116
21	11 38 6·23	3 35 25·5	·7598207	19 33·4	164 0 10·5	1 11 19·8	·7340257
22	11 38 37·42	3 32 17·9	·7587156	19 30·0	164 4 46·0	1 11 22·5	·7340398
23	11 39 8·16	3 29 13·4	·7576002	19 26·6	164 9 21·5	1 11 25·1	·7340538
24	11 39 38·44	3 26 11·9	·7564747	19 23·1	164 13 57·0	1 11 27·7	·7340678
25	11 40 8·25	3 23 13·4	·7553393	19 19·7	164 18 32·5	1 11 30·4	·7340818

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Month and Day.	Geocentric. Apparent Right Ascension. Noon.	Geocentric. Apparent Declination. Noon.	Geocentric. Log. of True Dist. from the Earth. Noon.	Geocentric. Meridian Passage.	Heliocentric. Longitude. Noon.	Heliocentric. Latitude. Noon.	Heliocentric. Log. of Rad. Vect. Noon.
	h m s	North. ° ′ ″		h m	° ′ ″	North. ° ′ ″	
Nov. 25	11 40 8·25	3 23 13·4	·7553393	19 19·7	164 18 32·5	1 11 30·4	·7340818
26	11 40 37·60	3 20 18·2	·7541940	19 16·3	164 23 8·0	1 11 33·0	·7340957
27	11 41 6·46	3 17 26·1	·7530392	19 12·8	164 27 43·4	1 11 35·6	·7341096
28	11 41 34·84	3 14 37·3	·7518748	19 9·3	164 32 18·8	1 11 38·2	·7341235
29	11 42 2·72	3 11 51·8	·7507013	19 5·9	164 36 54·2	1 11 40·8	·7341373
30	11 42 30·10	3 9 9·6	·7495187	19 2·4	164 41 29·6	1 11 43·4	·7341511
Dec. 1	11 42 56·97	3 6 30·9	·7483273	18 58·9	164 46 5·0	1 11 46·0	·7341649
2	11 43 23·33	3 3 55·6	·7471274	18 55·4	164 50 40·4	1 11 48·6	·7341787
3	11 43 49·16	3 1 23·7	·7459192	18 51·9	164 55 15·7	1 11 51·2	·7341924
4	11 44 14·46	2 58 55·4	·7447030	18 48·4	164 59 51·0	1 11 53·7	·7342061
5	11 44 39·23	2 56 30·6	·7434789	18 44·8	165 4 26·3	1 11 56·3	·7342197
6	11 45 3·46	2 54 9·4	·7422474	18 41·3	165 9 1·6	1 11 58·8	·7342333
7	11 45 27·14	2 51 51·9	·7410085	18 37·7	165 13 36·9	1 12 1·4	·7342469
8	11 45 50·26	2 49 38·0	·7397626	18 34·2	165 18 12·2	1 12 3·9	·7342604
9	11 46 12·83	2 47 27·9	·7385100	18 30·6	165 22 47·4	1 12 6·4	·7342739
10	11 46 34·83	2 45 21·5	·7372509	18 27·0	165 27 22·7	1 12 8·9	·7342874
11	11 46 56·27	2 43 19·0	·7359855	18 23·5	165 31 57·9	1 12 11·4	·7343008
12	11 47 17·12	2 41 20·2	·7347142	18 19·9	165 36 33·1	1 12 13·9	·7343143
13	11 47 37·40	2 39 25·4	·7334373	18 16·3	165 41 8·2	1 12 16·4	·7343276
14	11 47 57·09	2 37 34·4	·7321550	18 12·6	165 45 43·4	1 12 18·9	·7343410
15	11 48 16·18	2 35 47·4	·7308676	18 9·0	165 50 18·6	1 12 21·4	·7343543
16	11 48 34·68	2 34 4·3	·7295754	18 5·4	165 54 53·7	1 12 23·9	·7343676
17	11 48 52·57	2 32 25·3	·7282786	18 1·7	165 59 28·8	1 12 26·3	·7343808
18	11 49 9·85	2 30 50·3	·7269776	17 58·1	166 4 3·9	1 12 28·8	·7343940
19	11 49 26·52	2 29 19·3	·7256727	17 54·4	166 8 39·0	1 12 31·2	·7344072
20	11 49 42·56	2 27 52·5	·7243641	17 50·7	166 13 14·1	1 12 33·7	·7344203
21	11 49 57·98	2 26 29·9	·7230522	17 47·1	166 17 49·1	1 12 36·1	·7344334
22	11 50 12·78	2 25 11·4	·7217372	17 43·4	166 22 24·1	1 12 38·5	·7344465
23	11 50 26·95	2 23 57·2	·7204196	17 39·7	166 26 59·1	1 12 40·9	·7344595
24	11 50 40·46	2 22 47·3	·7190997	17 36·0	166 31 34·1	1 12 43·3	·7344725
25	11 50 53·31	2 21 41·6	·7177779	17 32·2	166 36 9·1	1 12 45·7	·7344855
26	11 51 5·48	2 20 40·3	·7164545	17 28·5	166 40 44·1	1 12 48·1	·7344984
27	11 51 16·99	2 19 43·4	·7151299	17 24·7	166 45 19·0	1 12 50·5	·7345113
28	11 51 27·85	2 18 50·9	·7138045	17 21·0	166 49 54·0	1 12 52·9	·7345242
29	11 51 38·05	2 18 2·8	·7124788	17 17·2	166 54 28·9	1 12 55·3	·7345370
30	11 51 47·57	2 17 19·2	·7111531	17 13·4	166 59 3·8	1 12 57·6	·7345498
31	11 51 56·41	2 16 40·0	·7098280	17 9·6	167 3 38·7	1 13 0·0	·7345626
32	11 52 4·57	2 16 5·3	·7085039	17 5·8	167 8 13·5	1 13 2·3	·7345753

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	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*North.* ° ′ ″	°	h m	° ′ ″	*North.* ° ′ ″	°
Jan. 1	10 46 33·34	9 41 10·2	·9412593	15 59·4	154 13 26·2	1 39 22·5	·9680070
2	10 46 28·34	9 41 56·3	·9405628	15 55·4	154 15 33·4	1 39 26·6	·9680200
3	10 46 22·94	9 42 44·8	·9398732	15 51·4	154 17 40·7	1 39 30·7	·9680330
4	10 46 17·13	9 43 35·6	·9391910	15 47·3	154 19 48·0	1 39 34·8	·9680459
5	10 46 10·94	9 44 28·7	·9385163	15 43·3	154 21 55·2	1 39 39·0	·9680589
6	10 46 4·34	9 45 24·1	·9378494	15 39·2	154 24 2·4	1 39 43·1	·9680719
7	10 45 57·36	9 46 21·7	·9371907	15 35·2	154 26 9·7	1 39 47·2	·9680849
8	10 45 49·99	9 47 21·5	·9365404	15 31·1	154 28 16·9	1 39 51·3	·9680979
9	10 45 42·23	9 48 23·6	·9358988	15 27·1	154 30 24·1	1 39 55·4	·9681108
10	10 45 34·10	9 49 27·8	·9352662	15 23·0	154 32 31·3	1 39 59·5	·9681238
11	10 45 25·58	9 50 34·1	·9346430	15 18·9	154 34 38·5	1 40 3·6	·9681368
12	10 45 16·70	9 51 42·5	·9340293	15 14·8	154 36 45·7	1 40 7·7	·9681498
13	10 45 7·45	9 52 53·0	·9334255	15 10·7	154 38 52·8	1 40 11·8	·9681628
14	10 44 57·84	9 54 5·5	·9328319	15 6·6	154 41 0·0	1 40 15·9	·9681758
15	10 44 47·87	9 55 19·9	·9322487	15 2·5	154 43 7·2	1 40 20·0	·9681888
16	10 44 37·55	9 56 36·3	·9316762	14 58·4	154 45 14·3	1 40 24·0	·9682018
17	10 44 26·88	9 57 54·6	·9311146	14 54·3	154 47 21·5	1 40 28·1	·9682148
18	10 44 15·88	9 59 14·8	·9305642	14 50·2	154 49 28·6	1 40 32·2	·9682278
19	10 44 4·54	10 0 36·7	·9300252	14 46·1	154 51 35·7	1 40 36·3	·9682409
20	10 43 52·88	10 2 0·4	·9294979	14 42·0	154 53 42·8	1 40 40·4	·9682539
21	10 43 40·90	10 3 25·8	·9289824	14 37·9	154 55 49·9	1 40 44·4	·9682669
22	10 43 28·60	10 4 53·0	·9284791	14 33·7	154 57 57·0	1 40 48·5	·9682799
23	10 43 16·00	10 6 21·7	·9279880	14 29·6	155 0 4·1	1 40 52·6	·9682930
24	10 43 3·10	10 7 52·0	·9275095	14 25·4	155 2 11·2	1 40 56·6	·9683060
25	10 42 49·90	10 9 23·8	·9270437	14 21·3	155 4 18·3	1 41 0·7	·9683190
26	10 42 36·42	10 10 57·1	·9265908	14 17·1	155 6 25·4	1 41 4·8	·9683320
27	10 42 22·65	10 12 31·8	·9261511	14 13·0	155 8 32·4	1 41 8·8	·9683451
28	10 42 8·62	10 14 7·9	·9257246	14 8·8	155 10 39·4	1 41 12·9	·9683581
29	10 41 54·31	10 15 45·3	·9253118	14 4·6	155 12 46·5	1 41 16·9	·9683712
30	10 41 39·75	10 17 24·0	·9249127	14 0·4	155 14 53·5	1 41 21·0	·9683842
31	10 41 24·94	10 19 4·0	·9245275	13 56·2	155 17 0·5	1 41 25·0	·9683973
Feb. 1	10 41 9·88	10 20 45·2	·9241564	13 52·1	155 19 7·5	1 41 29·1	·9684103
2	10 40 54·59	10 22 27·5	·9237997	13 47·9	155 21 14·5	1 41 33·1	·9684234
3	10 40 39·07	10 24 10·9	·9234575	13 43·7	155 23 21·5	1 41 37·2	·9684364
4	10 40 23·33	10 25 55·3	·9231299	13 39·5	155 25 28·5	1 41 41·2	·9684495
5	10 40 7·37	10 27 40·7	·9228173	13 35·3	155 27 35·4	1 41 45·2	·9684626
6	10 39 51·22	10 29 27·0	·9225197	13 31·1	155 29 42·4	1 41 49·3	·9684756
7	10 39 34·87	10 31 14·1	·9222374	13 26·9	155 31 49·4	1 41 53·3	·9684887
8	10 39 18·34	10 33 2·0	·9219704	13 22·7	155 33 56·3	1 41 57·3	·9685018
9	10 39 1·64	10 34 50·6	·9217190	13 18·5	155 36 3·2	1 42 1·3	·9685148
10	10 38 44·77	10 36 39·8	·9214831	13 14·2	155 38 10·2	1 42 5·4	·9685279
11	10 38 27·75	10 38 29·7	·9212630	13 10·0	155 40 17·1	1 42 9·4	·9685410

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	h m s	North. ° ′ ″	°	h m	° ′ ″	North. ° ′ ″	°
Feb. 11	10 38 27·75	10 38 29·7	·9212630	13 10·0	155 40 17·1	1 42 9·4	·9685410
12	10 38 10·58	10 40 20·0	·9210588	13 5·8	155 42 24·0	1 42 13·4	·9685540
13	10 37 53·28	10 42 10·8	·9208706	13 1·6	155 44 30·9	1 42 17·4	·9685671
14	10 37 35·85	10 44 2·0	·9206984	12 57·4	155 46 37·8	1 42 21·4	·9685802
15	10 37 18·32	10 45 53·6	·9205423	12 53·2	155 48 44·7	1 42 25·4	·9685933
16	10 37 0·68	10 47 45·5	·9204023	12 48·9	155 50 51·5	1 42 29·4	·9686064
17	10 36 42·94	10 49 37·5	·9202786	12 44·7	155 52 58·4	1 42 33·5	·9686195
18	10 36 25·13	10 51 29·6	·9201712	12 40·5	155 55 5·2	1 42 37·5	·9686326
19	10 36 7·25	10 53 21·8	·9200801	12 36·2	155 57 12·1	1 42 41·5	·9686457
20	10 35 49·31	10 55 13·9	·9200053	12 32·0	155 59 18·9	1 42 45·4	·9686588
21	10 35 31·31	10 57 6·0	·9199468	12 27·8	156 1 25·8	1 42 49·4	·9686719
22	10 35 13·28	10 58 58·0	·9199047	12 23·6	156 3 32·6	1 42 53·4	·9686850
23	10 34 55·21	11 0 49·9	·9198789	12 19·3	156 5 39·4	1 42 57·4	·9686981
24	10 34 37·12	11 2 41·5	·9198695	12 15·1	156 7 46·2	1 43 1·4	·9687112
25	10 34 19·02	11 4 32·9	·9198764	12 10·9	156 9 53·0	1 43 5·4	·9687243
26	10 34 0·91	11 6 23·9	·9198996	12 6·6	156 11 59·8	1 43 9·4	·9687374
27	10 33 42·81	11 8 14·5	·9199392	12 2·4	156 14 6·5	1 43 13·3	·9687505
28	10 33 24·72	11 10 4·7	·9199950	11 58·2	156 16 13·3	1 43 17·3	·9687636
Mar. 1	10 33 6·66	11 11 54·4	·9200671	11 53·9	156 18 20·1	1 43 21·3	·9687767
2	10 32 48·64	11 13 43·5	·9201555	11 49·7	156 20 26·8	1 43 25·2	·9687898
3	10 32 30·66	11 15 32·0	·9202601	11 45·5	156 22 33·6	1 43 29·2	·9688029
4	10 32 12·73	11 17 19·8	·9203808	11 41·2	156 24 40·3	1 43 33·1	·9688160
5	10 31 54·88	11 19 6·8	·9205177	11 37·0	156 26 47·0	1 43 37·1	·9688291
6	10 31 37·10	11 20 53·1	·9206706	11 32·8	156 28 53·7	1 43 41·1	·9688423
7	10 31 19·40	11 22 38·5	·9208396	11 28·6	156 31 0·4	1 43 45·0	·9688554
8	10 31 1·81	11 24 22·9	·9210244	11 24·3	156 33 7·1	1 43 49·0	·9688685
9	10 30 44·33	11 26 6·3	·9212252	11 20·1	156 35 13·8	1 43 52·9	·9688816
10	10 30 26·96	11 27 48·7	·9214416	11 15·9	156 37 20·5	1 43 56·9	·9688947
11	10 30 9·73	11 29 30·0	·9216737	11 11·7	156 39 27·2	1 44 0·8	·9689079
12	10 29 52·64	11 31 10·2	·9219213	11 7·4	156 41 33·9	1 44 4·7	·9689210
13	10 29 35·69	11 32 49·1	·9221841	11 3·2	156 43 40·5	1 44 8·7	·9689341
14	10 29 18·90	11 34 26·8	·9224622	10 59·0	156 45 47·2	1 44 12·6	·9689473
15	10 29 2·28	11 36 3·2	·9227553	10 54·8	156 47 53·8	1 44 16·5	·9689604
16	10 28 45·83	11 37 38·2	·9230632	10 50·6	156 50 0·5	1 44 20·5	·9689735
17	10 28 29·57	11 39 11·8	·9233858	10 46·4	156 52 7·1	1 44 24·4	·9689867
18	10 28 13·51	11 40 44·0	·9237229	10 42·2	156 54 13·7	1 44 28·3	·9689998
19	10 27 57·64	11 42 14·6	·9240743	10 38·1	156 56 20·3	1 44 32·2	·9690129
20	10 27 41·99	11 43 43·8	·9244399	10 33·9	156 58 26·9	1 44 36·1	·9690261
21	10 27 26·56	11 45 11·4	·9248194	10 29·7	157 0 33·5	1 44 40·1	·9690392
22	10 27 11·35	11 46 37·4	·9252127	10 25·5	157 2 40·1	1 44 44·0	·9690524
23	10 26 56·37	11 48 1·7	·9256195	10 21·3	157 4 46·7	1 44 47·9	·9690655
24	10 26 41·64	11 49 24·4	·9260397	10 17·1	157 6 53·3	1 44 51·8	·9690787

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	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
		North.				*North.*	
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
Mar. 24	10 26 41·64	11 49 24·4	·9260397	10 17·1	157 6 53·3	1 44 51·8	·9690787
25	10 26 27·16	11 50 45·3	·9264731	10 13·0	157 8 59·8	1 44 55·7	·9690919
26	10 26 12·93	11 52 4·5	·9269194	10 8·8	157 11 6·4	1 44 59·6	·9691050
27	10 25 58·97	11 53 21·9	·9273784	10 4·6	157 13 12·9	1 45 3·5	·9691182
28	10 25 45·28	11 54 37·5	·9278499	10 0·5	157 15 19·5	1 45 7·4	·9691313
29	10 25 31·86	11 55 51·2	·9283338	9 56·3	157 17 26·0	1 45 11·3	·9691445
30	10 25 18·73	11 57 3·1	·9288298	9 52·2	157 19 32·5	1 45 15·2	·9691577
31	10 25 5·89	11 58 13·0	·9293376	9 48·0	157 21 39·1	1 45 19·1	·9691709
Apr. 1	10 24 53·34	11 59 21·0	·9298572	9 43·9	157 23 45·6	1 45 23·0	·9691841
2	10 24 41·09	12 0 27·1	·9303882	9 39·8	157 25 52·1	1 45 26·9	·9691972
3	10 24 29·15	12 1 31·1	·9309304	9 35·7	157 27 58·6	1 45 30·8	·9692104
4	10 24 17·53	12 2 33·2	·9314837	9 31·5	157 30 5·1	1 45 34·6	·9692236
5	10 24 6·22	12 3 33·1	·9320477	9 27·4	157 32 11·5	1 45 38·5	·9692368
6	10 23 55·25	12 4 31·0	·9326222	9 23·3	157 34 18·0	1 45 42·4	·9692500
7	10 23 44·60	12 5 26·8	·9332071	9 19·2	157 36 24·5	1 45 46·3	·9692632
8	10 23 34·29	12 6 20·4	·9338021	9 15·1	157 38 31·0	1 45 50·1	·9692764
9	10 23 24·33	12 7 11·8	·9344068	9 11·0	157 40 37·4	1 45 54·0	·9692896
10	10 23 14·71	12 8 1·1	·9350211	9 6·9	157 42 43·9	1 45 57·9	·9693028
11	10 23 5·45	12 8 48·2	·9356446	9 2·8	157 44 50·3	1 46 1·8	·9693160
12	10 22 56·54	12 9 33·0	·9362771	8 58·7	157 46 56·7	1 46 5·6	·9693292
13	10 22 48·00	12 10 15·6	·9369183	8 54·7	157 49 3·2	1 46 9·5	·9693425
14	10 22 39·82	12 10 56·0	·9375679	8 50·6	157 51 9·6	1 46 13·3	·9693557
15	10 22 32·01	12 11 34·1	·9382257	8 46·5	157 53 16·0	1 46 17·2	·9693689
16	10 22 24·57	12 12 9·9	·9388913	8 42·5	157 55 22·4	1 46 21·0	·9693821
17	10 22 17·51	12 12 43·5	·9395645	8 38·4	157 57 28·8	1 46 24·9	·9693953
18	10 22 10·83	12 13 14·7	·9402450	8 34·4	157 59 35·2	1 46 28·7	·9694085
19	10 22 4·52	12 13 43·7	·9409326	8 30·4	158 1 41·6	1 46 32·6	·9694218
20	10 21 58·60	12 14 10·3	·9416269	8 26·3	158 3 48·0	1 46 36·4	·9694350
21	10 21 53·06	12 14 34·7	·9423277	8 22·3	158 5 54·4	1 46 40·3	·9694482
22	10 21 47·92	12 14 56·7	·9430347	8 18·3	158 8 0·7	1 46 44·1	·9694615
23	10 21 43·16	12 15 16·4	·9437478	8 14·3	158 10 7·1	1 46 47·9	·9694747
24	10 21 38·79	12 15 33·7	·9444666	8 10·3	158 12 13·5	1 46 51·8	·9694879
25	10 21 34·81	12 15 48·8	·9451909	8 6·3	158 14 19·8	1 46 55·6	·9695012
26	10 21 31·23	12 16 1·5	·9459205	8 2·3	158 16 26·2	1 46 59·4	·9695145
27	10 21 28·03	12 16 12·0	·9466551	7 58·3	158 18 32·5	1 47 3·3	·9695277
28	10 21 25·24	12 16 20·1	·9473945	7 54·4	158 20 38·9	1 47 7·1	·9695410
29	10 21 22·84	12 16 25·8	·9481385	7 50·4	158 22 45·2	1 47 10·9	·9695542
30	10 21 20·84	12 16 29·3	·9488867	7 46·4	158 24 51·5	1 47 14·7	·9695675
May 1	10 21 19·24	12 16 30·4	·9496390	7 42·5	158 26 57·9	1 47 18·5	·9695807
2	10 21 18·04	12 16 29·2	·9503951	7 38·5	158 29 4·2	1 47 22·3	·9695940
3	10 21 17·23	12 16 25·6	·9511548	7 34·6	158 31 10·5	1 47 26·2	·9696073
4	10 21 16·83	12 16 19·7	·9519179	7 30·6	158 33 16·8	1 47 30·0	·9696205

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	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	North. ° ′ ″	°	h m	° ′ ″	North. ° ′ ″	°
May 4	10 21 16·83	12 16 19·7	·9519179	7 30·6	158 33 16·8	1 47 30·0	·9696205
5	10 21 16·83	12 16 11·5	·9526839	7 26·7	158 35 23·1	1 47 33·8	·9696338
6	10 21 17·24	12 16 0·9	·9534528	7 22·8	158 37 29·4	1 47 37·6	·9696471
7	10 21 18·04	12 15 48·0	·9542243	7 18·9	158 39 35·7	1 47 41·4	·9696604
8	10 21 19·25	12 15 32·7	·9549980	7 14·9	158 41 42·0	1 47 45·2	·9696737
9	10 21 20·86	12 15 15·1	·9557739	7 11·0	158 43 48·3	1 47 49·0	·9696870
10	10 21 22·88	12 14 55·2	·9565516	7 7·1	158 45 54·5	1 47 52·8	·9697003
11	10 21 25·29	12 14 33·0	·9573309	7 3·3	158 48 0·8	1 47 56·5	·9697135
12	10 21 28·11	12 14 8·4	·9581115	6 59·4	158 50 7·0	1 48 0·3	·9697268
13	10 21 31·33	12 13 41·6	·9588933	6 55·5	158 52 13·3	1 48 4·1	·9697401
14	10 21 34·95	12 13 12·5	·9596758	6 51·6	158 54 19·5	1 48 7·9	·9697534
15	10 21 38·96	12 12 41·2	·9604590	6 47·8	158 56 25·8	1 48 11·7	·9697667
16	10 21 43·37	12 12 7·5	·9612425	6 43·9	158 58 32·0	1 48 15·4	·9697800
17	10 21 48·18	12 11 31·7	·9620262	6 40·1	159 0 38·2	1 48 19·2	·9697933
18	10 21 53·37	12 10 53·6	·9628098	6 36·2	159 2 44·5	1 48 23·0	·9698066
19	10 21 58·96	12 10 13·3	·9635931	6 32·4	159 4 50·7	1 48 26·8	·9698199
20	10 22 4·93	12 9 30·8	·9643759	6 28·6	159 6 56·9	1 48 30·5	·9698332
21	10 22 11·29	12 8 46·1	·9651580	6 24·7	159 9 3·1	1 48 34·3	·9698465
22	10 22 18·03	12 7 59·2	·9659392	6 20·9	159 11 9·3	1 48 38·0	·9698598
23	10 22 25·15	12 7 10·1	·9667193	6 17·1	159 13 15·4	1 48 41·8	·9698732
24	10 22 32·65	12 6 18·9	·9674981	6 13·3	159 15 21·6	1 48 45·5	·9698865
25	10 22 40·52	12 5 25·6	·9682755	6 9·5	159 17 27·8	1 48 49·3	·9698998
26	10 22 48·77	12 4 30·2	·9690513	6 5·7	159 19 34·0	1 48 53·0	·9699131
27	10 22 57·39	12 3 32·6	·9698253	6 1·9	159 21 40·1	1 48 56·8	·9699264
28	10 23 6·38	12 2 33·0	·9705972	5 58·1	159 23 46·3	1 49 0·5	·9699398
29	10 23 15·74	12 1 31·2	·9713671	5 54·4	159 25 52·4	1 49 4·3	·9699531
30	10 23 25·46	12 0 27·5	·9721345	5 50·6	159 27 58·6	1 49 8·0	·9699664
31	10 23 35·54	11 59 21·6	·9728995	5 46·8	159 30 4·7	1 49 11·7	·9699797
June 1	10 23 45·98	11 58 13·7	·9736618	5 43·1	159 32 10·8	1 49 15·5	·9699931
2	10 23 56·78	11 57 3·8	·9744212	5 39·3	159 34 16·9	1 49 19·2	·9700064
3	10 24 7·94	11 55 51·8	·9751775	5 35·6	159 36 23·0	1 49 22·9	·9700198
4	10 24 19·46	11 54 37·9	·9759307	5 31·8	159 38 29·1	1 49 26·6	·9700331
5	10 24 31·32	11 53 21·9	·9766804	5 28·1	159 40 35·2	1 49 30·4	·9700465
6	10 24 43·53	11 52 4·0	·9774265	5 24·4	159 42 41·3	1 49 34·1	·9700598
7	10 24 56·09	11 50 44·1	·9781689	5 20·7	159 44 47·4	1 49 37·8	·9700732
8	10 25 8·99	11 49 22·2	·9789073	5 17·0	159 46 53·5	1 49 41·5	·9700865
9	10 25 22·23	11 47 58·5	·9796417	5 13·2	159 48 59·5	1 49 45·2	·9700999
10	10 25 35·81	11 46 32·8	·9803717	5 9·5	159 51 5·6	1 49 48·9	·9701132
11	10 25 49·71	11 45 5·2	·9810973	5 5·8	159 53 11·6	1 49 52·6	·9701266
12	10 26 3·95	11 43 35·8	·9818183	5 2·1	159 55 17·7	1 49 56·3	·9701399
13	10 26 18·51	11 42 4·5	·9825345	4 58·4	159 57 23·7	1 50 0·0	·9701533
14	10 26 33·39	11 40 31·5	·9832457	4 54·8	159 59 29·7	1 50 3·7	·9701667

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	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*North.* ° ′ ″	⊙	h m	° ′ ″	*North.* ° ′ ″	⊙
June 14	10 26 33·39	11 40 31·5	·9832457	4 54·8	159 59 29·7	1 50 3·7	·9701667
15	10 26 48·59	11 38 56·6	·9839519	4 51·1	160 1 35·8	1 50 7·4	·9701800
16	10 27 4·11	11 37 19·9	·9846530	4 47·4	160 3 41·8	1 50 11·1	·9701934
17	10 27 19·93	11 35 41·5	·9853487	4 43·7	160 5 47·8	1 50 14·8	·9702068
18	10 27 36·05	11 34 1·4	·9860389	4 40·1	160 7 53·8	1 50 18·5	·9702201
19	10 27 52·47	11 32 19·6	·9867236	4 36·4	160 9 59·8	1 50 22·1	·9702335
20	10 28 9·20	11 30 36·0	·9874026	4 32·8	160 12 5·7	1 50 25·8	·9702469
21	10 28 26·21	11 28 50·8	·9880758	4 29·1	160 14 11·7	1 50 29·5	·9702602
22	10 28 43·52	11 27 4·0	·9887431	4 25·5	160 16 17·7	1 50 33·2	·9702736
23	10 29 1·11	11 25 15·4	·9894044	4 21·8	160 18 23·7	1 50 36·8	·9702870
24	10 29 18·98	11 23 25·3	·9900596	4 18·2	160 20 29·6	1 50 40·5	·9703004
25	10 29 37·14	11 21 33·5	·9907086	4 14·6	160 22 35·5	1 50 44·2	·9703138
26	10 29 55·57	11 19 40·2	·9913513	4 10·9	160 24 41·5	1 50 47·8	·9703272
27	10 30 14·27	11 17 45·2	·9919875	4 7·3	160 26 47·4	1 50 51·5	·9703406
28	10 30 33·25	11 15 48·7	·9926172	4 3·7	160 28 53·3	1 50 55·1	·9703540
29	10 30 52·49	11 13 50·7	·9932402	4 0·1	160 30 59·3	1 50 58·8	·9703673
30	10 31 11·99	11 11 51·2	·9938565	3 56·5	160 33 5·2	1 51 2·4	·9703807
July 1	10 31 31·75	11 9 50·2	·9944659	3 52·9	160 35 11·1	1 51 6·1	·9703941
2	10 31 51·77	11 7 47·7	·9950684	3 49·3	160 37 16·9	1 51 9·7	·9704075
3	10 32 12·05	11 5 43·8	·9956638	3 45·7	160 39 22·8	1 51 13·4	·9704209
4	10 32 32·57	11 3 38·4	·9962519	3 42·1	160 41 28·7	1 51 17·0	·9704343
5	10 32 53·33	11 1 31·6	·9968327	3 38·5	160 43 34·6	1 51 20·6	·9704477
6	10 33 14·34	10 59 23·4	·9974061	3 34·9	160 45 40·4	1 51 24·3	·9704611
7	10 33 35·59	10 57 13·8	·9979719	3 31·3	160 47 46·3	1 51 27·9	·9704745
8	10 33 57·07	10 55 2·8	·9985301	3 27·8	160 49 52·1	1 51 31·5	·9704879
9	10 34 18·77	10 52 50·5	·9990805	3 24·2	160 51 57·9	1 51 35·2	·9705013
10	10 34 40·71	10 50 36·8	·9996231	3 20·6	160 54 3·8	1 51 38·8	·9705147
11	10 35 2·86	10 48 21·9	I ·0001578	3 17·1	160 56 9·6	1 51 42·4	·9705281
12	10 35 25·23	10 46 5·7	·0006845	3 13·5	160 58 15·4	1 51 46·0	·9705415
13	10 35 47·81	10 43 48·3	·0012031	3 10·0	161 0 21·2	1 51 49·6	·9705549
14	10 36 10·60	10 41 29·7	·0017135	3 6·4	161 2 27·0	1 51 53·2	·9705683
15	10 36 33·60	10 39 9·9	·0022156	3 2·8	161 4 32·7	1 51 56·8	·9705817
16	10 36 56·79	10 36 48·9	·0027095	2 59·3	161 6 38·5	1 52 0·5	·9705952
17	10 37 20·17	10 34 26·8	·0031950	2 55·7	161 8 44·3	1 52 4·1	·9706086
18	10 37 43·75	10 32 3·6	·0036721	2 52·2	161 10 50·0	1 52 7·7	·9706220
19	10 38 7·52	10 29 39·3	·0041407	2 48·7	161 12 55·8	1 52 11·3	·9706354
20	10 38 31·46	10 27 13·9	·0046008	2 45·1	161 15 1·5	1 52 14·8	·9706488
21	10 38 55·59	10 24 47·4	·0050523	2 41·6	161 17 7·3	1 52 18·4	·9706623
22	10 39 19·89	10 22 19·9	·0054952	2 38·1	161 19 13·0	1 52 22·0	·9706757
23	10 39 44·37	10 19 51·3	·0059294	2 34·5	161 21 18·7	1 52 25·6	·9706891
24	10 40 9·01	10 17 21·8	·0063548	2 31·0	161 23 24·4	1 52 29·2	·9707025
25	10 40 33·82	10 14 51·3	·0067715	2 27·5	161 25 30·1	1 52 32·8	·9707159

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Month and Day.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
		North.	I			*North.*	O
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
July 25	10 40 33·82	10 14 51·3	·0067715	2 27·5	161 25 30·1	1 52 32·8	·9707159
26	10 40 58·79	10 12 19·8	·0071793	2 24·0	161 27 35·8	1 52 36·4	·9707293
27	10 41 23·92	10 9 47·3	·0075782	2 20·5	161 29 41·4	1 52 39·9	·9707428
28	10 41 49·20	10 7 13·9	·0079681	2 17·0	161 31 47·1	1 52 43·5	·9707562
29	10 42 14·63	10 4 39·7	·0083489	2 13·4	161 33 52·8	1 52 47·1	·9707696
30	10 42 40·21	10 2 4·5	·0087206	2 9·9	161 35 58·4	1 52 50·7	·9707830
31	10 43 5·93	9 59 28·5	·0090831	2 6·4	161 38 4·0	1 52 54·2	·9707964
Aug. 1	10 43 31·80	9 56 51·6	·0094364	2 2·9	161 40 9·7	1 52 57·8	·9708099
2	10 43 57·80	9 54 13·9	·0097803	1 59·4	161 42 15·3	1 53 1·3	·9708233
3	10 44 23·93	9 51 35·4	·0101149	1 55·9	161 44 20·9	1 53 4·9	·9708367
4	10 44 50·19	9 48 56·2	·0104400	1 52·4	161 46 26·5	1 53 8·5	·9708501
5	10 45 16·57	9 46 16·2	·0107557	1 48·9	161 48 32·1	1 53 12·0	·9708635
6	10 45 43·07	9 43 35·5	·0110619	1 45·4	161 50 37·7	1 53 15·6	·9708770
7	10 46 9·69	9 40 54·1	·0113584	1 42·0	161 52 43·2	1 53 19·1	·9708904
8	10 46 36·42	9 38 12·0	·0116454	1 38·5	161 54 48·8	1 53 22·6	·9709038
9	10 47 3·25	9 35 29·3	·0119226	1 35·0	161 56 54·4	1 53 26·2	·9709173
10	10 47 30·19	9 32 45·9	·0121902	1 31·5	161 58 59·9	1 53 29·7	·9709307
11	10 47 57·23	9 30 2·0	·0124480	1 28·0	162 1 5·4	1 53 33·3	·9709441
12	10 48 24·36	9 27 17·5	·0126960	1 24·5	162 3 11·0	1 53 36·8	·9709576
13	10 48 51·59	9 24 32·5	·0129342	1 21·1	162 5 16·5	1 53 40·3	·9709710
14	10 49 18·90	9 21 46·9	·0131625	1 17·6	162 7 22·0	1 53 43·9	·9709845
15	10 49 46·29	9 19 0·9	·0133810	1 14·1	162 9 27·5	1 53 47·4	·9709979
16	10 50 13·76	9 16 14·4	·0135897	1 10·6	162 11 33·0	1 53 50·9	·9710114
17	10 50 41·30	9 13 27·5	·0137884	1 7·1	162 13 38·5	1 53 54·4	·9710248
18	10 51 8·91	9 10 40·2	·0139773	1 3·7	162 15 44·0	1 53 58·0	·9710383
19	10 51 36·58	9 7 52·4	·0141563	1 0·2	162 17 49·4	1 54 1·5	·9710517
20	10 52 4·32	9 5 4·3	·0143253	0 56·7	162 19 54·9	1 54 5·0	·9710652
21	10 52 32·12	9 2 15·9	·0144844	0 53·3	162 22 0·3	1 54 8·5	·9710786
22	10 52 59·97	8 59 27·0	·0146336	0 49·8	162 24 5·8	1 54 12·0	·9710921
23	10 53 27·88	8 56 37·9	·0147727	0 46·3	162 26 11·2	1 54 15·5	·9711055
24	10 53 55·84	8 53 48·4	·0149019	0 42·9	162 28 16·6	1 54 19·0	·9711190
25	10 54 23·84	8 50 58·7	·0150210	0 39·4	162 30 22·0	1 54 22·5	·9711324
26	10 54 51·90	8 48 8·6	·0151301	0 35·9	162 32 27·4	1 54 26·0	·9711459
27	10 55 19·98	8 45 18·4	·0152290	0 32·5	162 34 32·8	1 54 29·5	·9711594
28	10 55 48·10	8 42 27·9	·0153178	0 29·0	162 36 38·2	1 54 33·0	·9711728
29	10 56 16·25	8 39 37·3	·0153965	0 25·5	162 38 43·6	1 54 36·5	·9711863
30	10 56 44·43	8 36 46·6	·0154650	0 22·1	162 40 48·9	1 54 40·0	·9711998
31	10 57 12·63	8 33 55·7	·0155232	0 18·6	162 42 54·3	1 54 43·5	·9712132
Sept. 1	10 57 40·84	8 31 4·7	·0155712	0 15·1	162 44 59·6	1 54 46·9	·9712267
2	10 58 9·08	8 28 13·7	·0156089	0 11·7	162 47 5·0	1 54 50·4	·9712402
3	10 58 37·32	8 25 22·6	·0156364	0 8·2	162 49 10·3	1 54 53·9	·9712537
4	10 59 5·57	8 22 31·5	·0156535	0 4·7	162 51 15·6	1 54 57·4	·9712672

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	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
		North.	I			*North.*	O
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
Sept. 4	10 59 5·57	8 22 31·5	·0156535	0 4·7	162 51 15·6	1 54 57·4	·9712672
5	10 59 33·82	8 19 40·4	·0156603	23 54·3	162 53 20·9	1 55 0·8	·9712807
6	11 0 2·08	8 16 49·3	·0156568	23 54·3	162 55 26·2	1 55 4·3	·9712942
7	11 0 30·32	8 13 58·3	·0156429	23 50·9	162 57 31·5	1 55 7·8	·9713076
8	11 0 58·56	8 11 7·3	·0156188	23 47·4	162 59 36·8	1 55 11·2	·9713211
9	11 1 26·77	8 8 16·5	·0155843	23 43·9	163 1 42·1	1 55 14·7	·9713346
10	11 1 54·97	8 5 25·9	·0155396	23 40·5	163 3 47·4	1 55 18·1	·9713481
11	11 2 23·14	8 2 35·5	·0154846	23 37·0	163 5 52·6	1 55 21·6	·9713616
12	11 2 51·29	7 59 45·2	·0154193	23 33·5	163 7 57·9	1 55 25·0	·9713751
13	11 3 19·40	7 56 55·2	·0153437	23 30·1	163 10 3·1	1 55 28·5	·9713886
14	11 3 47·48	7 54 5·5	·0152580	23 26·6	163 12 8·4	1 55 31·9	·9714021
15	11 4 15·51	7 51 16·1	·0151619	23 23·2	163 14 13·6	1 55 35·4	·9714156
16	11 4 43·51	7 48 26·9	·0150557	23 19·7	163 16 18·8	1 55 38·8	·9714291
17	11 5 11·46	7 45 38·1	·0149393	23 16·2	163 18 24·1	1 55 42·3	·9714426
18	11 5 39·36	7 42 49·6	·0148127	23 12·7	163 20 29·3	1 55 45·7	·9714561
19	11 6 7·21	7 40 1·4	·0146759	23 9·3	163 22 34·5	1 55 49·1	·9714696
20	11 6 35·00	7 37 13·7	·0145290	23 5·8	163 24 39·6	1 55 52·6	·9714831
21	11 7 2·73	7 34 26·4	·0143719	23 2·3	163 26 44·8	1 55 56·0	·9714966
22	11 7 30·39	7 31 39·6	·0142046	22 58·9	163 28 50·0	1 55 59·4	·9715101
23	11 7 57·98	7 28 53·2	·0140272	22 55·4	163 30 55·2	1 56 2·8	·9715236
24	11 8 25·51	7 26 7·3	·0138397	22 51·9	163 33 0·3	1 56 6·2	·9715371
25	11 8 52·95	7 23 22·0	·0136421	22 48·4	163 35 5·5	1 56 9·6	·9715506
26	11 9 20·32	7 20 37·2	·0134343	22 44·9	163 37 10·6	1 56 13·1	·9715642
27	11 9 47·60	7 17 53·0	·0132164	22 41·5	163 39 15·8	1 56 16·5	·9715777
28	11 10 14·79	7 15 9·4	·0129885	22 38·0	163 41 20·9	1 56 19·9	·9715912
29	11 10 41·89	7 12 26·4	·0127505	22 34·5	163 43 26·0	1 56 23·3	·9716047
30	11 11 8·89	7 9 44·1	·0125024	22 31·0	163 45 31·1	1 56 26·7	·9716182
Oct. 1	11 11 35·80	7 7 2·5	·0122443	22 27·5	163 47 36·2	1 56 30·1	·9716318
2	11 12 2·59	7 4 21·6	·0119762	22 24·0	163 49 41·3	1 56 33·5	·9716453
3	11 12 29·28	7 1 41·5	·0116980	22 20·5	163 51 46·4	1 56 36·8	·9716588
4	11 12 55·85	6 59 2·2	·0114099	22 17·0	163 53 51·5	1 56 40·2	·9716724
5	11 13 22·30	6 56 23·7	·0111118	22 13·5	163 55 56·6	1 56 43·6	·9716859
6	11 13 48·63	6 53 46·1	·0108038	22 10·0	163 58 1·6	1 56 47·0	·9716995
7	11 14 14·83	6 51 9·4	·0104860	22 6·6	164 0 6·7	1 56 50·4	·9717130
8	11 14 40·90	6 48 33·6	·0101584	22 3·1	164 2 11·8	1 56 53·7	·9717265
9	11 15 6·83	6 45 58·7	·0098211	21 59·6	164 4 16·8	1 56 57·1	·9717401
10	11 15 32·62	6 43 24·8	·0094741	21 56·0	164 6 21·9	1 57 0·5	·9717536
11	11 15 58·26	6 40 51·9	·0091176	21 52·5	164 8 26·9	1 57 3·9	·9717672
12	11 16 23·76	6 38 20·0	·0087515	21 49·0	164 10 31·9	1 57 7·2	·9717807
13	11 16 49·10	6 35 49·1	·0083759	21 45·5	164 12 36·9	1 57 10·6	·9717942
14	11 17 14·29	6 33 19·3	·0079910	21 42·0	164 14 42·0	1 57 13·9	·9718078
15	11 17 39·31	6 30 50·6	·0075966	21 38·5	164 16 47·0	1 57 17·3	·9718213

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	h m s	North. ° ′ ″	I	h m	° ′ ″	North. ° ′ ″	○
Oct. 15	11 17 39·31	6 30 50·6	·0075966	21 38·5	164 16 47·0	1 57 17·3	·9718213
16	11 18 4·17	6 28 23·1	·0071930	21 35·0	164 18 52·0	1 57 20·6	·9718349
17	11 18 28·86	6 25 56·7	·0067801	21 31·4	164 20 56·9	1 57 24·0	·9718484
18	11 18 53·38	6 23 31·6	·0063580	21 27·9	164 23 1·9	1 57 27·3	·9718620
19	11 19 17·72	6 21 7·6	·0059268	21 24·4	164 25 6·9	1 57 30·7	·9718755
20	11 19 41·88	6 18 44·9	·0054865	21 20·8	164 27 11·9	1 57 34·0	·9718891
21	11 20 5·85	6 16 23·4	·0050372	21 17·3	164 29 16·8	1 57 37·4	·9719026
22	11 20 29·64	6 14 3·2	·0045789	21 13·8	164 31 21·8	1 57 40·7	·9719162
23	11 20 53·24	6 11 44·3	·0041116	21 10·2	164 33 26·8	1 57 44·0	·9719298
24	11 21 16·64	6 9 26·7	·0036354	21 6·7	164 35 31·7	1 57 47·4	·9719433
25	11 21 39·84	6 7 10·6	·0031505	21 3·1	164 37 36·7	1 57 50·7	·9719569
26	11 22 2·84	6 4 55·8	·0026568	20 59·6	164 39 41·6	1 57 54·0	·9719705
27	11 22 25·63	6 2 42·4	·0021546	20 56·0	164 41 46·5	1 57 57·3	·9719841
28	11 22 48·20	6 0 30·5	·0016438	20 52·4	164 43 51·5	1 58 0·7	·9719976
29	11 23 10·56	5 58 20·1	·0011242	20 48·9	164 45 56·4	1 58 4·0	·9720112
30	11 23 32·69	5 56 11·2	·0005962	20 45·3	164 48 1·3	1 58 7·3	·9720248
31	11 23 54·59	5 54 3·9	·0000600	20 41·7	164 50 6·2	1 58 10·6	·9720383
			○				
Nov. 1	11 24 16·27	5 51 58·2	·9995155	20 38·2	164 52 11·1	1 58 13·9	·9720519
2	11 24 37·70	5 49 54·0	·9989630	20 34·6	164 54 16·0	1 58 17·2	·9720655
3	11 24 58·90	5 47 51·6	·9984024	20 31·0	164 56 20·9	1 58 20·5	·9720791
4	11 25 19·85	5 45 50·9	·9978337	20 27·4	164 58 25·7	1 58 23·8	·9720927
5	11 25 40·55	5 43 51·8	·9972571	20 23·8	165 0 30·6	1 58 27·1	·9721062
6	11 26 1·00	5 41 54·5	·9966729	20 20·2	165 2 35·5	1 58 30·4	·9721198
7	11 26 21·18	5 39 59·0	·9960812	20 16·6	165 4 40·3	1 58 33·7	·9721334
8	11 26 41·11	5 38 5·3	·9954820	20 13·0	165 6 45·2	1 58 37·0	·9721470
9	11 27 0·77	5 36 13·3	·9948755	20 9·4	165 8 50·0	1 58 40·3	·9721606
10	11 27 20·16	5 34 23·1	·9942617	20 5·8	165 10 54·9	1 58 43·6	·9721741
11	11 27 39·27	5 32 34·8	·9936409	20 2·2	165 12 59·7	1 58 46·8	·9721877
12	11 27 58·11	5 30 48·4	·9930131	19 58·6	165 15 4·6	1 58 50·1	·9722013
13	11 28 16·67	5 29 3·9	·9923785	19 54·9	165 17 9·4	1 58 53·4	·9722149
14	11 28 34·94	5 27 21·3	·9917372	19 51·3	165 19 14·2	1 58 56·7	·9722285
15	11 28 52·92	5 25 40·7	·9910893	19 47·7	165 21 19·0	1 58 59·9	·9722421
16	11 29 10·61	5 24 2·1	·9904348	19 44·0	165 23 23·8	1 59 3·2	·9722557
17	11 29 28·01	5 22 25·5	·9897740	19 40·4	165 25 28·6	1 59 6·5	·9722693
18	11 29 45·11	5 20 50·9	·9891070	19 36·7	165 27 33·4	1 59 9·7	·9722829
19	11 30 1·90	5 19 18·3	·9884340	19 33·1	165 29 38·2	1 59 13·0	·9722965
20	11 30 18·39	5 17 47·9	·9877551	19 29·4	165 31 42·9	1 59 16·3	·9723101
21	11 30 34·57	5 16 19·5	·9870704	19 25·7	165 33 47·7	1 59 19·5	·9723237
22	11 30 50·44	5 14 53·2	·9863798	19 22·1	165 35 52·5	1 59 22·8	·9723373
23	11 31 5·99	5 13 29·1	·9856836	19 18·4	165 37 57·2	1 59 26·0	·9723509
24	11 31 21·21	5 12 7·1	·9849821	19 14·7	165 40 2·0	1 59 29·2	·9723645
25	11 31 36·11	5 10 47·4	·9842754	19 11·0	165 42 6·7	1 59 32·5	·9723781

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Month and Day.	Geocentric.				Heliocentric.		
	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
	h m s	*North.* ° ′ ″	°	h m	° ′ ″	*North.* ° ′ ″	°
Nov. 25	11 31 36·11	5 10 47·4	·9842754	19 11·0	165 42 6·7	1 59 32·5	·9723781
26	11 31 50·68	5 9 29·8	·9835638	19 7·3	165 44 11·5	1 59 35·7	·9723917
27	11 32 4·92	5 8 14·5	·9828473	19 3·6	165 46 16·2	1 59 39·0	·9724052
28	11 32 18·82	5 7 1·5	·9821258	18 59·9	165 48 20·9	1 59 42·2	·9724188
29	11 32 32·38	5 5 50·7	·9813996	18 56·2	165 50 25·7	1 59 45·4	·9724324
30	11 32 45·59	5 4 42·3	·9806692	18 52·5	165 52 30·4	1 59 48·7	·9724460
Dec. 1	11 32 58·45	5 3 36·2	·9799347	18 48·7	165 54 35·1	1 59 51·9	·9724596
2	11 33 10·96	5 2 32·5	·9791962	18 45·0	165 56 39·8	1 59 55·1	·9724732
3	11 33 23·12	5 1 31·2	·9784539	18 41·3	165 58 44·5	1 59 58·3	·9724868
4	11 33 34·91	5 0 32·3	·9777078	18 37·5	166 0 49·1	2 0 1·5	·9725004
5	11 33 46·34	4 59 35·8	·9769583	18 33·8	166 2 53·8	2 0 4·8	·9725140
6	11 33 57·41	4 58 41·8	·9762057	18 30·0	166 4 58·5	2 0 8·0	·9725276
7	11 34 8·11	4 57 50·2	·9754501	18 26·3	166 7 3·2	2 0 11·2	·9725412
8	11 34 18·44	4 57 1·1	·9746917	18 22·5	166 9 7·8	2 0 14·4	·9725548
9	11 34 28·39	4 56 14·4	·9739308	18 18·7	166 11 12·5	2 0 17·6	·9725684
10	11 34 37·97	4 55 30·2	·9731676	18 15·0	166 13 17·1	2 0 20·8	·9725820
11	11 34 47·17	4 54 48·5	·9724022	18 11·2	166 15 21·7	2 0 24·0	·9725956
12	11 34 55·99	4 54 9·2	·9716349	18 7·4	166 17 26·4	2 0 27·2	·9726092
13	11 35 4·44	4 53 32·5	·9708659	18 3·6	166 19 31·0	2 0 30·4	·9726228
14	11 35 12·50	4 52 58·4	·9700955	17 59·8	166 21 35·6	2 0 33·6	·9726364
15	11 35 20·17	4 52 26·7	·9693237	17 56·0	166 23 40·2	2 0 36·7	·9726501
16	11 35 27·46	4 51 57·6	·9685507	17 52·2	166 25 44·8	2 0 39·9	·9726637
17	11 35 34·36	4 51 31·0	·9677768	17 48·4	166 27 49·4	2 0 43·1	·9726773
18	11 35 40·87	4 51 7·0	·9670023	17 44·5	166 29 54·0	2 0 46·3	·9726909
19	11 35 46·98	4 50 45·6	·9662275	17 40·7	166 31 58·6	2 0 49·5	·9727045
20	11 35 52·70	4 50 26·8	·9654525	17 36·9	166 34 3·2	2 0 52·6	·9727181
21	11 35 58·03	4 50 10·6	·9646775	17 33·0	166 36 7·7	2 0 55·8	·9727317
22	11 36 2·96	4 49 57·0	·9639026	17 29·1	166 38 12·3	2 0 59·0	·9727453
23	11 36 7·49	4 49 46·0	·9631282	17 25·3	166 40 16·8	2 1 2·1	·9727590
24	11 36 11·62	4 49 37·6	·9623546	17 21·4	166 42 21·4	2 1 5·3	·9727726
25	11 36 15·34	4 49 31·9	·9615820	17 17·5	166 44 25·9	2 1 8·5	·9727862
26	11 36 18·66	4 49 28·7	·9608107	17 13·6	166 46 30·4	2 1 11·6	·9727999
27	11 36 21·57	4 49 28·2	·9600410	17 9·8	166 48 34·9	2 1 14·8	·9728135
28	11 36 24·07	4 49 30·3	·9592728	17 5·9	166 50 39·4	2 1 17·9	·9728271
29	11 36 26·17	4 49 35·0	·9585065	17 2·0	166 52 44·0	2 1 21·1	·9728407
30	11 36 27·86	4 49 42·4	·9577426	16 58·0	166 54 48·4	2 1 24·2	·9728544
31	11 36 29·13	4 49 52·4	·9569814	16 54·1	166 56 52·9	2 1 27·4	·9728680
32	11 36 30·00	4 50 5·0	·9562230	16 50·2	166 58 57·4	2 1 30·5	·9728816

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	Apparent Right Ascension.	*Apparent* Declination.	Log. of True Dist. from the Earth.	Meridian Passage.	Longitude.	Latitude.	Log. of Rad. Vect.
	Noon.	*Noon.*	*Noon.*		*Noon.*	*Noon.*	*Noon.*
		North.				*South.*	
	h m s	° ′ ″	I	h m	° ′ ″	° ′ ″	I
Jan. 1	4 28 34·46	21 45 15·4	·2657789	9 42·4	70 24 38·7	0 2 19·3	·2850859
5	4 28 1·02	21 44 4·9	·2666788	9 26·2	70 27 26·8	0 2 17·0	·2850688
9	4 27 30·01	21 42 59·5	·2676714	9 9·9	70 30 14·8	0 2 14·8	·2850518
13	4 27 1·67	21 41 59·7	·2687504	8 53·7	70 33 2·9	0 2 12·5	·2850348
17	4 26 36·21	21 41 5·9	·2699089	8 37·6	70 35 51·0	0 2 10·2	·2850177
21	4 26 13·79	21 40 18·6	·2711395	8 21·5	70 38 39·0	0 2 8·0	·2850007
25	4 25 54·55	21 39 38·3	·2724346	8 5·5	70 41 27·1	0 2 5·7	·2849836
29	4 25 38·60	21 39 5·2	·2737865	7 49·5	70 44 15·1	0 2 3·4	·2849665
Feb. 2	4 25 26·06	21 38 39·8	·2751880	7 33·6	70 47 3·1	0 2 1·1	·2849494
6	4 25 17·01	21 38 22·2	·2766317	7 17·7	70 49 51·2	0 1 58·9	·2849322
10	4 25 11·53	21 38 12·7	·2781096	7 1·9	70 52 39·2	0 1 56·6	·2849151
14	4 25 9·67	21 38 11·3	·2796134	6 46·1	70 55 27·2	0 1 54·3	·2848980
18	4 25 11·46	21 38 18·1	·2811348	6 30·4	70 58 15·1	0 1 52·0	·2848809
22	4 25 16·89	21 38 33·0	·2826655	6 14·8	71 1 3·1	0 1 49·7	·2848637
26	4 25 25·92	21 38 56·1	·2841982	5 59·2	71 3 51·1	0 1 47·5	·2848466
Mar. 2	4 25 38·51	21 39 27·2	·2857261	5 43·7	71 6 39·0	0 1 45·2	·2848295
6	4 25 54·62	21 40 6·2	·2872421	5 28·3	71 9 26·9	0 1 42·9	·2848123
10	4 26 14·22	21 40 52·8	·2887393	5 12·9	71 12 14·9	0 1 40·6	·2847952
14	4 26 37·22	21 41 46·7	·2902106	4 57·5	71 15 2·8	0 1 38·3	·2847781
18	4 27 3·52	21 42 47·7	·2916491	4 42·2	71 17 50·8	0 1 36·1	·2847610
22	4 27 33·01	21 43 55·3	·2930487	4 26·9	71 20 38·7	0 1 33·8	·2847438
26	4 28 5·55	21 45 9·3	·2944037	4 11·7	71 23 26·7	0 1 31·5	·2847267
30	4 28 41·02	21 46 29·3	·2957092	3 56·6	71 26 14·7	0 1 29·2	·2847095
Apr. 3	4 29 19·29	21 47 54·8	·2969606	3 41·6	71 29 2·7	0 1 26·9	·2846923
7	4 30 0·24	21 49 25·4	·2981528	3 26·5	71 31 50·8	0 1 24·7	·2846751
11	4 30 43·73	21 51 0·7	·2992811	3 11·5	71 34 38·8	0 1 22·4	·2846579
15	4 31 29·58	21 52 40·3	·3003411	2 56·5	71 37 26·9	0 1 20·1	·2846407
19	4 32 17·62	21 54 23·6	·3013290	2 41·6	71 40 15·0	0 1 17·8	·2846235
23	4 33 7·68	21 56 10·1	·3022419	2 26·7	71 43 3·1	0 1 15·5	·2846063
27	4 33 59·59	21 57 59·4	·3030771	2 11·9	71 45 51·3	0 1 13·3	·2845892
May 1	4 34 53·18	21 59 51·0	·3038320	1 57·0	71 48 39·5	0 1 11·0	·2845720
5	4 35 48·31	22 1 44·6	·3045042	1 42·2	71 51 27·8	0 1 8·7	·2845548
9	4 36 44·78	22 3 39·6	·3050911	1 27·4	71 54 16·1	0 1 6·4	·2845376
13	4 37 42·41	22 5 35·5	·3055902	1 12·6	71 57 4·4	0 1 4·1	·2845204
17	4 38 41·00	22 7 32·0	·3060007	0 57·9	71 59 52·7	0 1 1·9	·2845032
21	4 39 40·37	22 9 28·6	·3063223	0 43·1	72 2 41·1	0 0 59·6	·2844861
25	4 40 40·33	22 11 25·0	·3065536	0 28·4	72 5 29·5	0 0 57·3	·2844689
29	4 41 40·70	22 13 20·7	·3066938	0 13·7	72 8 18·0	0 0 55·0	·2844517
June 2	4 42 41·32	22 15 15·4	·3067427	23 55·3	72 11 6·4	0 0 52·7	·2844345
6	4 43 42·02	22 17 8·8	·3067003	23 40·6	72 13 54·9	0 0 50·5	·2844173
10	4 44 42·59	22 19 0·5	·3065665	23 25·8	72 16 43·4	0 0 48·2	·2844001
14	4 45 42·83	22 20 50·1	·3063413	23 11·1	72 19 31·9	0 0 45·9	·2843828
18	4 46 42·55	22 22 37·4	·3060260	22 56·3	72 22 20·5	0 0 43·6	·2843656
22	4 47 41·58	22 24 22·1	·3056222	22 41·6	72 25 9·0	0 0 41·3	·2843484
26	4 48 39·75	22 26 3·9	·3051311	22 26·8	72 27 57·6	0 0 39·1	·2843312
30	4 49 36·90	22 27 42·7	·3045542	22 12·0	72 30 46·2	0 0 36·8	·2843140
July 4	4 50 32·83	22 29 18·3	·3038928	21 57·2	72 33 34·8	0 0 34·5	·2842968

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		North.	I			South.	I
	h m s	° ′ ″		h m	° ′ ″	° ′ ″	
July 4	4 50 32·83	22 29 18·3	·3038928	21 57·2	72 33 34·8	0 0 34·5	·2842968
8	4 51 27·37	22 30 50·3	·3031485	21 42·4	72 36 23·3	0 0 32·2	·2842796
12	4 52 20·33	22 32 18·5	·3023241	21 27·5	72 39 11·9	0 0 29·9	·2842624
16	4 53 11·52	22 33 42·9	·3014226	21 12·7	72 42 0·5	0 0 27·7	·2842451
20	4 54 0·81	22 35 3·2	·3004470	20 57·8	72 44 49·1	0 0 25·4	·2842279
24	4 54 48·06	22 36 19·3	·2994008	20 42·8	72 47 37·7	0 0 23·1	·2842107
28	4 55 33·09	22 37 31·2	·2982871	20 27·8	72 50 26·3	0 0 20·8	·2841934
Aug. 1	4 56 15·74	22 38 38·7	·2971093	20 12·8	72 53 14·8	0 0 18·5	·2841761
5	4 56 55·86	22 39 41·6	·2958714	19 57·7	72 56 3·3	0 0 16·3	·2841589
9	4 57 33·29	22 40 39·9	·2945778	19 42·6	72 58 51·9	0 0 14·0	·2841417
13	4 58 7·91	22 41 33·6	·2932336	19 27·4	73 1 40·4	0 0 11·7	·2841244
17	4 58 39·59	22 42 22·5	·2918442	19 12·2	73 4 28·9	0 0 9·4	·2841072
21	4 59 8·21	22 43 6·6	·2904147	18 56·9	73 7 17·4	0 0 7·1	·2840899
25	4 59 33·68	22 43 45·7	·2889505	18 41·6	73 10 5·9	0 0 4·9	·2840727
29	4 59 55·89	22 44 19·9	·2874571	18 26·3	73 12 54·4	0 0 2·6	·2840554
Sept. 2	5 0 14·76	22 44 49·1	·2859400	18 10·9	73 15 42·9	0 0 0·3	·2840381
						North.	
6	5 0 30·18	22 45 13·4	·2844063	17 55·4	73 18 31·4	0 0 2·0	·2840208
10	5 0 42·08	22 45 32·6	·2828630	17 39·8	73 21 19·9	0 0 4·3	·2840035
14	5 0 50·44	22 45 46·8	·2813170	17 24·2	73 24 8·3	0 0 6·6	·2839863
18	5 0 55·23	22 45 55·9	·2797752	17 8·6	73 26 56·8	0 0 8·9	·2839690
22	5 0 56·45	22 46 0·0	·2782447	16 52·9	73 29 45·3	0 0 11·2	·2839517
26	5 0 54·09	22 45 59·0	·2767325	16 37·1	73 32 33·8	0 0 13·5	·2839344
30	5 0 48·16	22 45 52·9	·2752462	16 21·2	73 35 22·3	0 0 15·8	·2839171
Oct. 4	5 0 38·69	22 45 41·8	·2737934	16 5·3	73 38 10·8	0 0 18·0	·2838999
8	5 0 25·73	22 45 25·8	·2723821	15 49·4	73 40 59·4	0 0 20·3	·2838826
12	5 0 9·38	22 45 4·9	·2710203	15 33·4	73 43 47·9	0 0 22·6	·2838653
16	4 59 49·75	22 44 39·2	·2697153	15 17·3	73 46 36·5	0 0 24·9	·2838480
20	4 59 26·99	22 44 8·7	·2684741	15 1·2	73 49 25·1	0 0 27·2	·2838307
24	4 59 1·22	22 43 33·6	·2673036	14 45·1	73 52 13·8	0 0 29·4	·2838134
28	4 58 32·59	22 42 54·1	·2662104	14 28·9	73 55 2·5	0 0 31·7	·2837961
Nov. 1	4 58 1·28	22 42 10·3	·2652016	14 12·6	73 57 51·2	0 0 34·0	·2837788
5	4 57 27·50	22 41 22·4	·2642836	13 56·3	74 0 40·0	0 0 36·3	·2837615
9	4 56 51·50	22 40 30·8	·2634626	13 39·9	74 3 28·8	0 0 38·6	·2837442
13	4 56 13·53	22 39 35·7	·2627438	13 23·6	74 6 17·6	0 0 40·9	·2837270
17	4 55 33·86	22 38 37·4	·2621314	13 7·2	74 9 6·5	0 0 43·2	·2837097
21	4 54 52·76	22 37 36·2	·2616287	12 50·8	74 11 55·4	0 0 45·5	·2836924
25	4 54 10·50	22 36 32·4	·2612394	12 34·4	74 14 44·4	0 0 47·8	·2836750
29	4 53 27·36	22 35 26·5	·2609663	12 17·9	74 17 33·3	0 0 50·1	·2836577
Dec. 3	4 52 43·67	22 34 19·1	·2608119	12 1·5	74 20 22·3	0 0 52·3	·2836404
7	4 51 59·75	22 33 10·5	·2607775	11 45·0	74 23 11·3	0 0 54·6	·2836231
11	4 51 15·93	22 32 1·4	·2608632	11 28·6	74 26 0·3	0 0 56·9	·2836057
15	4 50 32·54	22 30 52·2	·2610679	11 12·1	74 28 49·4	0 0 59·2	·2835884
19	4 49 49·88	22 29 43·4	·2613903	10 55·7	74 31 38·5	0 1 1·5	·2835711
23	4 49 8·22	22 28 35·5	·2618280	10 39·3	74 34 27·6	0 1 3·7	·2835537
27	4 48 27·86	22 27 29·2	·2623786	10 22·9	74 37 16·7	0 1 6·0	·2835364
31	4 47 49·10	22 26 25·0	·2630392	10 6·5	74 40 5·8	0 1 8·3	·2835191
35	4 47 12·23	22 25 23·6	·2638053	9 50·2	74 42 54·9	0 1 10·6	·2835017

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	h m s	South. ° ′ ″	I	h m	° ′ ″	South. ° ′ ″	I
Jan. 1	23 50 16·76	2 29 43·5	·4786296	5 5·0	358 36 28·0	1 19 56·5	·4753187
5	23 50 30·00	2 28 7·9	·4795902	4 49·5	358 37 55·8	1 19 58·3	·4753178
9	23 50 45·12	2 26 20·3	·4805272	4 34·0	358 39 23·6	1 20 0·1	·4753168
13	23 51 2·10	2 24 21·1	·4814360	4 18·6	358 40 51·4	1 20 1·9	·4753158
17	23 51 20·83	2 22 10·8	·4823126	4 3·2	358 42 19·1	1 20 3·7	·4753149
21	23 51 41·26	2 19 50·0	·4831528	3 47·8	358 43 46·9	1 20 5·5	·4753139
25	23 52 3·28	2 17 19·3	·4839534	3 32·4	358 45 14·6	1 20 7·3	·4753130
29	23 52 26·82	2 14 39·2	·4847108	3 17·1	358 46 42·3	1 20 9·1	·4753120
Feb. 2	23 52 51·77	2 11 50·4	·4854222	3 1·8	358 48 9·9	1 20 10·9	·4753111
6	23 53 18·07	2 8 53·5	·4860846	2 46·5	358 49 37·6	1 20 12·7	·4753101
10	23 53 45·58	2 5 49·2	·4866951	2 31·2	358 51 5·2	1 20 14·5	·4753092
14	23 54 14·22	2 2 38·2	·4872508	2 15·9	358 52 32·8	1 20 16·3	·4753082
18	23 54 43·85	1 59 21·3	·4877500	2 0·7	358 54 0·3	1 20 18·1	·4753073
22	23 55 14·37	1 55 59·4	·4881905	1 45·5	358 55 27·9	1 20 19·9	·4753063
26	23 55 45·66	1 52 33·3	·4885711	1 30·3	358 56 55·4	1 20 21·6	·4753054
Mar. 2	23 56 17·61	1 49 3·6	·4888908	1 15·1	358 58 22·9	1 20 23·4	·4753044
6	23 56 50·10	1 45 31·0	·4891483	0 59·9	358 59 50·4	1 20 25·2	·4753035
10	23 57 23·02	1 41 56·3	·4893424	0 44·7	359 1 17·9	1 20 27·0	·4753025
14	23 57 56·23	1 38 20·4	·4894727	0 29·5	359 2 45·4	1 20 28·8	·4753016
18	23 58 29·62	1 34 44·2	·4895383	0 14·3	359 4 12·9	1 20 30·6	·4753006
22	23 59 3·06	1 31 8·4	·4895398	23 55·4	359 5 40·3	1 20 32·4	·4752997
26	23 59 36·42	1 27 33·8	·4894775	23 40·2	359 7 7·8	1 20 34·2	·4752987
30	0 0 9·60	1 24 1·1	·4893523	23 25·0	359 8 35·2	1 20 35·9	·4752978
Apr. 3	0 0 42·49	1 20 31·0	·4891645	23 9·8	359 10 2·7	1 20 37·7	·4752969
7	0 1 14·98	1 17 4·4	·4889150	22 54·6	359 11 30·2	1 20 39·5	·4752960
11	0 1 46·94	1 13 41·9	·4886040	22 39·4	359 12 57·7	1 20 41·3	·4752950
15	0 2 18·26	1 10 24·2	·4882337	22 24·2	359 14 25·2	1 20 43·1	·4752941
19	0 2 48·82	1 7 12·2	·4878055	22 9·0	359 15 52·7	1 20 44·9	·4752931
23	0 3 18·51	1 4 6·5	·4873220	21 53·8	359 17 20·3	1 20 46·6	·4752922
27	0 3 47·26	1 1 7·6	·4867849	21 38·6	359 18 47·9	1 20 48·4	·4752912
May 1	0 4 14·96	0 58 16·1	·4861965	21 23·3	359 20 15·5	1 20 50·2	·4752903
5	0 4 41·53	0 55 32·6	·4855583	21 8·0	359 21 43·1	1 20 51·9	·4752893
9	0 5 6·85	0 52 57·8	·4848736	20 52·7	359 23 10·8	1 20 53·7	·4752884
13	0 5 30·84	0 50 32·2	·4841446	20 37·3	359 24 38·5	1 20 55·5	·4752874
17	0 5 53·41	0 48 16·4	·4833751	20 21·9	359 26 6·2	1 20 57·3	·4752864
21	0 6 14·50	0 46 10·7	·4825682	20 6·6	359 27 33·9	1 20 59·1	·4752854
25	0 6 34·02	0 44 15·6	·4817274	19 51·2	359 29 1·6	1 21 0·8	·4752845
29	0 6 51·94	0 42 31·4	·4808557	19 35·8	359 30 29·3	1 21 2·6	·4752835
June 2	0 7 8·18	0 40 58·5	·4799569	19 20·3	359 31 57·1	1 21 4·4	·4752826
6	0 7 22·68	0 39 37·2	·4790340	19 4·8	359 33 24·9	1 21 6·2	·4752816
10	0 7 35·40	0 38 27·8	·4780916	18 49·2	359 34 52·7	1 21 7·9	·4752807
14	0 7 46·27	0 37 30·5	·4771337	18 33·7	359 36 20·5	1 21 9·7	·4752797
18	0 7 55·28	0 36 45·6	·4761646	18 18·1	359 37 48·3	1 21 11·4	·4752788
22	0 8 2·41	0 36 13·0	·4751886	18 2·5	359 39 16·1	1 21 13·2	·4752778
26	0 8 7·64	0 35 52·8	·4742098	17 46·8	359 40 43·9	1 21 14·9	·4752769
30	0 8 10·96	0 35 45·2	·4732320	17 31·2	359 42 11·7	1 21 16·7	·4752759
July 4	0 8 12·35	0 35 50·1	·4722598	17 15·5	359 43 39·5	1 21 18·5	·4752749

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	h m s	South. ° ′ ″	I	h m	° ′ ″	South. ° ′ ″	I
July 4	0 8 12·35	0 35 50·1	·4722598	17 15·5	359 43 39·5	1 21 18·5	·4752749
8	0 8 11·81	0 36 7·4	·4712977	16 59·8	359 45 7·3	1 21 20·3	·4752739
12	0 8 9·38	0 36 36·8	·4703504	16 44·0	359 46 35·1	1 21 22·0	·4752729
16	0 8 5·05	0 37 18·4	·4694229	16 28·2	359 48 2·8	1 21 23·8	·4752719
20	0 7 58·89	0 38 11·7	·4685193	16 12·3	359 49 30·5	1 21 25·5	·4752710
24	0 7 50·93	0 39 16·4	·4676435	15 56·4	359 50 58·3	1 21 27·3	·4752700
28	0 7 41·22	0 40 32·1	·4668000	15 40·5	359 52 26·0	1 21 29·0	·4752690
Aug. 1	0 7 29·80	0 41 58·5	·4659927	15 24·6	359 53 53·7	1 21 30·8	·4752680
5	0 7 16·74	0 43 35·0	·4652261	15 8·7	359 55 21·3	1 21 32·5	·4752670
9	0 7 2·11	0 45 21·2	·4645042	14 52·7	359 56 49·0	1 21 34·3	·4752660
13	0 6 46·02	0 47 16·4	·4638308	14 36·7	359 58 16·6	1 21 36·1	·4752650
17	0 6 28·56	0 49 19·8	·4632098	14 20·7	359 59 44·2	1 21 37·9	·4752640
21	0 6 9·85	0 51 30·8	·4626442	14 4·7	0 1 11·7	1 21 39·6	·4752630
25	0 5 49·98	0 53 48·6	·4621373	13 48·6	0 2 39·3	1 21 41·4	·4752620
29	0 5 29·07	0 56 12·4	·4616914	13 32·5	0 4 6·8	1 21 43·1	·4752609
Sept. 2	0 5 7·22	0 58 41·5	·4613093	13 16·4	0 5 34·3	1 21 44·9	·4752599
6	0 4 44·58	1 1 14·8	·4609934	13 0·3	0 7 1·8	1 21 46·6	·4752589
10	0 4 21·29	1 3 51·4	·4607466	12 44·2	0 8 29·3	1 21 48·4	·4752579
14	0 3 57·51	1 6 30·4	·4605696	12 28·1	0 9 56·7	1 21 50·1	·4752569
18	0 3 33·38	1 9 10·8	·4604637	12 12·0	0 11 24·2	1 21 51·8	·4752559
22	0 3 9·05	1 11 51·6	·4604292	11 55·8	0 12 51·7	1 21 53·5	·4752549
26	0 2 44·64	1 14 31·9	·4604668	11 39·7	0 14 19·2	1 21 55·3	·4752539
30	0 2 20·34	1 17 10·8	·4605763	11 23·6	0 15 46·6	1 21 57·0	·4752529
Oct. 4	0 1 56·27	1 19 47·2	·4607589	11 7·5	0 17 14·1	1 21 58·8	·4752519
8	0 1 32·60	1 22 20·0	·4610125	10 51·3	0 18 41·5	1 22 0·5	·4752509
12	0 1 9·50	1 24 48·2	·4613363	10 35·2	0 20 9·0	1 22 2·3	·4752498
16	0 0 47·11	1 27 11·0	·4617280	10 19·1	0 21 36·5	1 22 4·0	·4752488
20	0 0 25·56	1 29 27·5	·4621859	10 3·1	0 23 4·1	1 22 5·8	·4752477
24	0 0 4·99	1 31 36·7	·4627074	9 47·0	0 24 31·6	1 22 7·5	·4752467
28	23 59 45·54	1 33 37·3	·4632906	9 30·9	0 25 59·2	1 22 9·2	·4752456
Nov. 1	23 59 27·33	1 35 30·1	·4639320	9 14·9	0 27 26·7	1 22 10·9	·4752446
5	23 59 10·49	1 37 12·7	·4646290	8 58·9	0 28 54·3	1 22 12·7	·4752436
9	23 58 55·14	1 38 45·1	·4653769	8 42·9	0 30 21·9	1 22 14·4	·4752426
13	23 58 41·39	1 40 6·5	·4661717	8 26·9	0 31 49·6	1 22 16·2	·4752416
17	23 58 29·32	1 41 16·5	·4670090	8 11·0	0 33 17·3	1 22 17·9	·4752406
21	23 58 19·01	1 42 14·5	·4678850	7 55·1	0 34 45·0	1 22 19·6	·4752396
25	23 58 10·52	1 43 0·2	·4687947	7 39·3	0 36 12·7	1 22 21·4	·4752386
29	23 58 3·93	1 43 33·2	·4697339	7 23·4	0 37 40·4	1 22 23·1	·4752376
Dec. 3	23 57 59·29	1 43 53·2	·4706975	7 7·6	0 39 8·2	1 22 24·8	·4752366
7	23 57 56·66	1 43 59·8	·4716805	6 51·8	0 40 36·0	1 22 26·6	·4752356
11	23 57 56·06	1 43 53·1	·4726777	6 36·1	0 42 3·8	1 22 28·3	·4752345
15	23 57 57·50	1 43 33·0	·4736835	6 20·4	0 43 31·6	1 22 30·0	·4752335
19	23 58 0·98	1 42 59·7	·4746935	6 4·8	0 44 59·4	1 22 31·7	·4752325
23	23 58 6·51	1 42 13·1	·4757029	5 49·1	0 46 27·2	1 22 33·5	·4752315
27	23 58 14·05	1 41 13·4	·4767067	5 33·5	0 47 55·0	1 22 35·2	·4752305
31	23 58 23·62	1 40 0·7	·4777000	5 17·9	0 49 22·8	1 22 36·9	·4752295
35	23 58 35·16	1 38 35·3	·4786779	5 2·4	0 50 50·6	1 22 38·6	·4752285

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PLANETARY EPHEMERIDES AT TRANSIT.

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	Sid. Time of Semid' passing Merid.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Semidiameter.	Hor. Par.
	h m s	h m s	+ s	s	*South.* ° ′ ″	*South.* ° ′ ″	− ″	″	″
Jan. 1	17 40 22·75	17 46 45·79	15·89	0·18	23 24 7·7	23 34 3·1	26·1	2·5	6·6
3	17 53 12·26	17 59 41·99	16·17	0·18	23 42 51·7	23 50 31·6	20·6	2·5	6·5
5	18 6 14·72	18 12 50·29	16·42	0·18	23 57 0·8	24 2 17·8	14·7	2·4	6·4
7	18 19 28·54	18 26 9·25	16·65	0·18	24 6 20·8	24 9 8·2	8·6	2·4	6·3
9	18 32 52·35	18 39 37·56	16·84	0·18	24 10 39·2	24 10 51·9	2·2	2·4	6·3
11	18 46 24·83	18 53 14·00	17·01	0·17	24 9 45·2	24 7 17·9	+ 4·5	2·3	6·2
13	19 0 4·91	19 6 57·48	17·16	0·17	24 3 29·0	23 58 17·3	11·3	2·3	6·2
15	19 13 51·57	19 20 47·04	17·28	0·17	23 51 42·2	23 43 42·2	18·2	2·3	6·1
17	19 27 43·80	19 34 41·72	17·39	0·17	23 34 16·5	23 24 24·8	25·4	2·3	6·1
19	19 41 40·72	19 48 40·59	17·48	0·17	23 11 5·8	22 58 18·9	32·6	2·3	6·1
21	19 55 41·52	20 2 43·13	17·55	0·17	22 42 3·2	22 25 18·3	40·0	2·3	6·1
23	20 9 45·42	20 16 48·27	17·61	0·17	22 7 3·4	21 47 18·1	47·5	2·3	6·1
25	20 23 51·63	20 30 55·69	17·65	0·16	21 26 1·7	21 [illegible]	55·1	2·3	6·1
27	20 37 59·47	20 45 3·77	17·68	0·16	20 38 54·4	20 15 [illegible]	62 7	2·3	6·1
29	20 52 8·20		17·69	0·16	19 45 38·8		70·4	2·3	6·1
31	20 59 12·61	* * *	17·68	0·16	19 16 42·6	* * *	74·3	2·3	6·1
Feb. 2	21 13 21·04	21 6 16·94	17·66	0·16	18 14 13·9	18 46 14·1	81·9	2·3	6·2
4	21 27 27·98	21 20 24·77	17·62	0·17	17 5 39·5	17 40 42·1	89·5	2·3	6·2
6	21 41 32·07	21 34 30·48	17·54	0·17	15 51 6·0	16 29 6·9	96·9	2·4	6·3
8	21 55 31·47	21 48 32·50	17·42	0·17	14 30 45·5	15 11 38·1	103·9	2·4	6·4
10	22 9 23·68	22 2 28·66	17·24	0·17	13 [illegible]	13 48 30·9	110·5	2·5	6·5
12	22 23 5·20	22 16 16·04	16·97	0·17	11 34 12·1	12 20 9·7	116·3	2·5	6·6
14	22 36 31·26	22 29 50·51	16·59	0·17	9 59 12·5	10 47 10·7	121·0	2·6	6·8
16	22 49 35·43	22 43 6·57	16·05	0·18	8 20 59·9	9 10 25·7	124·2	2·7	7·1
18	23 2 9·15	22 55 56·72	15·31	0·18	6 40 57·0	7 31 6·1	125·5	2·8	7·3
20	23 14 1·67	23 8 11·32	14·33	0·19	5 0 50·7	5 50 46·7	124·3	2·9	7·6
22	23 24 59·93	23 19 38·47	13·05	0·20	3 22 53·8	4 11 27·1	120·1	3·0	8·0
24	23 34 49·09	23 30 4·13	11·45	0·21	1 49 39·7	2 35 30·8	112·3	3·2	8·4
26	23 43 13·38	23 39 12·83	9·51	0·22	0 23 57·4	1 5 41·2	101·2	3·4	8·9
28	23 49 57·45	23 46 48·83	7·28	0·23	*North.* 0 51 19·8	*North.* 0 15 10·0	86·4	3·6	9·5
Mar. 2	23 54 48·07	23 52 37·63	4·80	0·25	1 53 26·2	1 24 11·6	68·3	3·8	10·1
4	23 57 35·82	23 56 27·68	2·18	0·27	2 39 55·4	2 18 45·9	47·5	4·0	10·7
6	23 58 16·83	23 58 12·13	− 0·46	0·29	3 8 53·6	2 56 41·4	24·7	4·3	11·4
8	23 56 54·53	23 57 50·56	2·93	0·31	3 19 11·1	3 16 24·5	1·0	4·6	12·1
10	23 53 40·63	23 55 30·45	5·08	0·32	3 10 39·8	3 17 14·2	− 21·9	4·8	12·7
12	23 48 55·44	23 51 27·85	6·71	0·33	2 44 25·1	2 59 38·2	42·7	5·0	13·3
14	{13 43 6·89 / 13 50 58·04}	23 46 7·12	{7·70 / 7·93}	{0·35 / 0·35}	{0 [illegible] 54·0 / 1 37 31·6}	2 25 21·7	{59·6 / 44·0}	{5·0 / 5·0}	{13·7 / 13·9}
16	23 33 36·93	23 36 47·57	7·87	0·36	0 40 16·7	1 9 47·4	75·0	5·3	14·1
		23 30 31·02				0 9 35·2			

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	Apparent Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	Sid. Time of Semid' passing Merid.	Apparent Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Semidiameter.	Hor. Par.
	h m s	h m s	— s	s	South. ° ′ ″	South. ° ′ ″	— ″	″	″
Mar. 18	23 27 33·51	23 24 47·60	7·18	0·36	0 21 41·6	0 53 0·4	78·0	5·3	14·2
20	23 22 16·10	23 20 1·31	5·98	0·36	1 23 49·7	1 53 41·8	75·7	5·3	14·1
22	23 18 5·01	23 16 28·33	4·44	0·35	2 22 12·5	2 49 1·8	69·0	5·2	13·9
24	23 15 12·71	23 14 18·03	2·72	0·34	3 13 53·1	3 36 34·0	59·4	5·1	13·6
26	23 13 44·61	23 13 32·31	0·95	0·33	3 56 55·2	4 14 50·2	47·8	5·0	13·2
			+						
28	23 13 40·76	23 14 9·41	0·78	0·32	4 30 15·2	4 43 8·6	35·4	4·8	12·8
30	23 14 57·54	23 16 4·39	2·40	0·31	4 53 29·9	5 1 20·6	22·8	4·7	12·4
Apr. 1	23 17 29·12	23 19 10·83	3·89	0·30	5 6 43·1	5 9 39·8	10·4	4·5	12·0
							+		
3	23 21 8·66	23 23 21·72	5·23	0·29	5 10 14·8	5 8 32·0	1·4	4·4	11·6
5	23 25 49·19	23 28 30·27	6·43	0·28	5 4 35·5	4 58 29·4	12·6	4·2	11·2
7	23 31 24·13	23 34 39·06	7·50	0·27	4 50 17·8	4 40 5·2	23·0	4·1	10·8
9	23 37 47·36	23 41 15·42	8·45	0·26	4 27 55·7	4 13 53·4	32·8	3·9	10·4
11	23 44 53·85	23 48 41·47	9·30	0·25	3 58 2·2	3 40 25·8	41·9	3·8	10·0
13	23 52 38·49	23 56 44·21	10·06	0·25	3 21 7·7	3 0 11·5	50·3	3·7	9·7
15	0 0 58·29	0 5 20·29	10·75	0·24	2 37 40·3	2 13 37·5	58·2	3·5	9·4
17	0 9 50·01	0 14 27·17	11·39	0·23	1 48 6·3	1 21 9·2	65·6	3·4	9·1
19	0 19 21·35	0 24 13·01	12·00	0·22	0 52 49·2	0 23 9·2	72·5	3·3	8·8
					North.	North.			
21	0 29 1·31	0 34 6·45	12·57	0·22	0 7 48·4	0 40 1·1	79·0	3·2	8·5
23	0 39 18·37	0 44 36·99	13·14	0·21	1 13 25·9	1 48 0·5	85·0	3·1	8·2
25	0 50 2·31	0 55 34·39	13·70	0·20	2 23 42·4	3 0 29·3	90·6	3·0	8·0
27	1 1 23·29	1 6 59·69	14·26	0·19	3 38 18·3	4 17 7·1	95·8	2·9	7·8
29	1 12 31·92	1 18 51·93	14·85	0·19	4 56 52·7	5 37 32·6	100·6	2·9	7·6
May 1	1 24 59·25	1 31 14·14	15·46	0·18	6 19 3·4	7 1 22·6	104·8	2·8	7·4
3	1 37 36·78	1 44 7·38	16·11	0·18	7 44 26·3	8 28 11·0	108·5	2·8	7·3
5	1 50 46·22	1 57 33·54	16·79	0·18	9 12 33·2	9 57 28·3	111·6	2·7	7·1
7	2 4 29·60	2 11 34·69	17·52	0·17	10 42 51·2	11 28 37·0	114·0	2·6	7·0
9	2 18 49·01	2 26 22·82	18·29	0·17	12 14 40·0	13 0 53·9	115·4	2·6	6·8
11	2 33 46·29	2 41 29·58	19·10	0·18	13 47 11·2	14 33 24·5	115·7	2·5	6·7
13	2 49 22·80	2 57 25·92	19·92	0·18	15 19 25·0	16 5 3·3	114·6	2·5	6·7
15	3 5 38·88	3 14 1·47	20·74	0·18	16 50 9·1	17 34 31·7	111·9	2·5	6·6
17	3 22 33·37	3 31 14·11	21·52	0·18	18 17 59·0	19 0 19·1	107·3	2·5	6·5
19	3 40 15·07	3 48 59·43	22·20	0·18	19 41 19·8	20 20 48·0	100·7	2·5	6·5
21	* * *	3 58 2·30	*	*	* * *	20 58 31·3	*	*	*
23	4 7 10·60	4 16 23·08	22·94	0·18	21 34 17·8	22 7 56·2	86·8	2·5	6·5
25	4 25 38·45	4 34 55·30	23·18	0·18	22 39 16·4	23 8 9·6	75·3	2·5	6·6
27	4 44 12·23	4 53 27·80	23·19	0·18	23 34 28·6	23 58 7·7	62·5	2·5	6·6
29	5 2 40·59	5 11 49·27	22·96	0·18	24 19 3·5	24 37 14·0	48·9	2·5	6·7
31	5 20 52·55	5 29 49·26	22·51	0·19	24 52 38·7	25 5 19·0	35·1	2·6	6·8
June 2	5 38 38·34	5 47 18·84	21·87	0·19	25 15 17·5	25 22 38·1	21·6	2·6	7·0
4	5 55 49·89	6 4 20·75	21·09	0·20	25 27 25·5	25 29 45·2	8·9	2·7	7·2

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascension on intermediate Day.	Var. of R.A. in 1 Hour of Long.	Sid. Time of Semid^r passing Merid.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Semidiameter.	Hor. Par.
	h m s	h m s	+ s	s	*North.* ° ′ ″	*North.* ° ′ ″	— ″	″	″
June 6	6 12 20·82	6 20 19·54	20·19	0·20	25 29 43·4	25 27 27·0	2·9	2·8	7·4
8	6 28 6·44	6 35 41·15	19·20	0·21	25 23 3·0	25 16 38·4	13·6	2·9	7·6
10	6 43 3·35	6 50 12·73	18·16	0·22	25 8 20·2	24 58 16·2	23·0	3·0	7·9
12	6 57 9·07	7 3 52·19	17·07	0·23	24 46 33·6	24 33 19·4	31·2	3·1	8·2
14	7 10 21·88	7 16 38·02	15·96	0·24	24 18 41·0	24 2 45·5	38·3	3·2	8·5
16	7 22 40·44	7 28 29·01	14·81	0·25	23 45 39·6	23 27 30·1	44·1	3·3	8·8
18	7 34 3·57	7 39 24·00	13·65	0·25	23 8 23·7	22 48 27·1	48·9	3·4	9·1
20	7 44 30·13	7 49 21·82	12·46	0·25	22 27 46·5	22 6 28·4	52·5	3·6	9·5
22	7 53 58·85	7 58 21·08	11·24	0·26	21 44 39·3	21 22 25·4	55·1	3·7	9·9
24	8 2 28·26	8 6 20·18	9·98	0·27	20 59 52·9	20 37 7·8	56·7	3·8	10·2
26	8 9 56·56	8 13 17·16	8·69	0·28	20 14 16·4	19 51 25·1	57·2	4·0	10·6
28	8 16 21·69	8 19 9·83	7·35	0·29	19 28 40·0	19 6 7·4	56·7	4·2	11·1
30	8 21 41·26	8 23 55·66	5·96	0·30	18 43 55·2	18 22 4·4	55·1	4·3	11·5
July 2	8 25 52·68	8 27 32·00	4·51	0·32	18 0 47·5	17 40 9·0	52·4	4·5	12·0
4	8 28 53·30	8 29 56·28	3·01	0·33	17 20 15·5	17 1 13·3	48·7	4·7	12·4
6	8 30 40·72	8 31 6·41	1·46	0·34	16 43 9·4	16 26 10·6	43·9	4·9	12·9
8	8 31 13·21	8 31 1·14	— 0·11	0·35	16 10 22·8	15 55 52·9	37·9	5·0	13·3
10	8 30 30·28	8 29 40·90	1·67	0·36	15 42 46·6	15 31 9·9	30·9	5·2	13·7
12	8 28 33·39	8 27 8·42	3·18	0·37	15 21 7·9	15 12 45·5	23·0	5·3	14·1
14	8 25 26·86	8 23 29·82	4·56	0·37	15 6 6·3	15 1 13·4	14·4	5·4	14·4
16	8 21 18·65	8 18 55·03	5·74	0·38	14 58 8·8	14 56 53·4	5·4	5·5	14·7
18	8 16 20·89	8 13 38·43	6·61	0·38	14 57 26·8	14 59 47·3	+ 3·6	5·6	14·8
20	8 10 50·11	{8 7 58·44 / 8 2 6·17}	7·10	0·38	15 3 51·7	{14 3 26·0 / 13 26 54·3}	12·3	5·6	14·8
22	8 2 17·09	7 59 33·13	6·97	0·38	15 25 39·9	15 35 44·9	23·6	5·5	14·6
24	7 56 57·59	7 54 33·38	6·26	0·37	15 47 0·6	15 59 17·3	29·5	5·4	14·2
26	7 52 23·26	7 50 29·79	5·09	0·36	16 12 25·1	16 26 13·6	33·7	5·2	13·8
28	7 48 55·32	7 47 41·94	3·51	0·35	16 40 32·0	16 55 9·3	36·2	5·0	13·3
30	7 46 51·48	7 46 25·50	1·60	0·34	17 9 54·6	17 24 36·8	36·9	4·8	12·7
Aug. 1	7 46 25·30	7 46 51·88	+ 0·54	0·33	17 39 4·7	17 53 7·4	35·7	4·6	12·1
3	7 47 46·03	7 49 8·22	2·84	0·31	18 6 33·8	18 19 12·8	32·7	4·3	11·5
5	7 50 58·77	7 53 17·77	5·20	0·29	18 30 53·5	18 41 23·9	27·8	4·1	10·9
7	7 56 5·11	7 59 20·45	7·56	0·27	18 50 33·6	18 58 11·3	21·1	3·9	10·3
9	8 3 3·32	8 7 13·02	9·85	0·26	19 4 5·8	19 8 6·5	12·5	3·7	9·7
11	8 11 48·66	8 16 49·18	12·01	0·24	19 10 2·8	19 9 44·9	2·1	3·4	9·1
13	8 22 13·33	8 27 59·70	13·98	0·23	19 7 3·6	19 1 50·7	— 9·8	3·2	8·6
15	8 34 6·62	8 40 32·34	15·69	0·22	18 53 59·5	18 43 24·3	23·0	3·1	8·2
17	8 47 14·94	8 54 12·38	17·10	0·20	18 30 1·7	18 13 49·9	37·0	2·9	7·8
19	9 1 22·57	9 8 43·33	18·16	0·19	17 54 49·1	17 33 1·5	51·0	2·8	7·5

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Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	Sid. Time of Semid^r passing Merid.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Semidiameter.	Hor. Par.
	h m s	h m s	+ s	s	*North.* ° ′ ″	*North.* ° ′ ″	— ″	″	″
Aug. 21	9 16 12·58	9 23 48·24	18·87	0·19	17 8 31·4	16 41 24·9	64·6	2·7	7·2
23	9 31 28·36	9 39 11·14	19·24	0·19	16 11 49·4	15 39 54·0	77·0	2·6	7·0
25	9 46 54·92	9 54 38·25	19·32	0·19	15 5 48·6	14 29 43·6	87·8	2·6	6·9
27	10 2 19·85	10 9 58·66	19·18	0·18	13 51 49·9	13 12 18·6	96·8	2·5	6·7
29	10 17 33·80	10 25 4·56	18·88	0·18	12 31 20·7	11 49 6·1	104·1	2·5	6·5
31	10 32 30·38	10 39 50·88	18·47	0·17	11 5 45·3	10 21 27·6	109·6	2·4	6·4
Sept. 2	10 47 5·76	* * *	18·00	0·16	9 36 22·0	* * *	113·6	2·4	6·3
4	10 54 14·86	11 1 18·08	17·76	0·16	8 50 36·6	8 4 18·9	115·1	2·4	6·3
6	11 8 15·42	11 15 6·96	17·27	0·15	7 17 35·7	6 30 33·2	117·2	2·3	6·2
8	11 21 52·76	11 28 32·98	16·79	0·15	5 43 17·4	4 55 53·0	118·4	2·3	6·2
10	11 35 7·79	11 41 37·38	16·34	0·15	4 8 25·1	3 20 57·6	118·7	2·3	6·2
12	11 48 1·91	11 54 21·64	15·92	0·15	2 33 34·3	1 46 18·8	118·3	2·3	6·2
14	12 0 36·76	12 6 47·50	15·54	0·15	0 59 14·1	0 12 23·0	117·4	2·3	6·2
					South.	*South.*			
16	12 12 54·08	12 18 56·73	15·19	0·15	0 34 11·8	1 20 28·1	116·1	2·3	6·2
18	12 24 55·62	12 30 51·00	14·88	0·15	2 6 23·7	2 51 56·5	114·4	2·3	6·2
20	12 36 43·01	12 42 31·89	14·60	0·16	3 37 4·8	4 21 46·7	112·3	2·4	6·3
22	12 48 17·78	12 54 0·88	14·35	0·16	5 6 0·7	5 49 45·2	110·0	2·4	6·3
24	12 59 41·30	13 5 19·21	14·13	0·16	6 32 58·6	7 15 39·6	107·4	2·4	6·4
26	13 10 54·74	13 16 27·98	13·93	0·16	7 57 46·7	8 39 18·6	104·6	2·4	6·4
28	13 21 59·06	13 27 28·03	13·75	0·17	9 20 14·1	10 0 31·5	101·5	2·5	6·5
30	13 32 54·95	13 38 19·88	13·58	0·17	10 40 9·5	11 19 6·8	98·2	2·5	6·6
Oct. 2	13 43 42·84	13 49 3·83	13·42	0·17	11 57 22·1	12 34 53·9	94·7	2·5	6·7
4	13 54 22·84	13 59 39·84	13·25	0·18	13 11 40·5	13 47 40·2	91·0	2·6	6·8
6	14 4 54·71	14 10 7·38	13·07	0·18	14 22 52·1	14 57 13·9	87·0	2·6	6·9
8	14 15 17·69	14 20 25·50	12·88	0·19	15 30 43·9	16 3 20·7	82·7	2·7	7·1
10	14 25 30·57	14 30 32·66	12·65	0·19	16 35 1·6	17 5 45·1	78·0	2·8	7·3
12	14 35 31·44	14 40 26·57	12·38	0·19	17 35 28·8	18 4 10·2	73·0	2·8	7·4
14	14 45 17·63	14 50 4·11	12·04	0·20	18 31 47·0	18 58 16·4	67·7	2·9	7·6
16	14 54 45·45	14 59 21·02	11·61	0·20	19 23 35·2	19 47 40·5	61·8	2·9	7·8
18	15 3 50·05	15 8 11·70	11·06	0·21	20 10 28·9	20 31 56·4	55·4	3·0	8·1
20	15 12 25·01	15 16 28·87	10·37	0·23	20 51 59·0	21 10 32·1	48·3	3·2	8·4
22	15 20 22·05	15 24 3·14	9·47	0·24	21 27 30·8	21 42 49·3	40·4	3·3	8·7
24	15 27 30·59	15 30 42·70	8·34	0·24	21 56 22·0	22 8 1·8	31·6	3·4	9·0
26	15 33 37·53	15 36 12·98	6·90	0·25	22 17 41·1	22 25 11·4	21·5	3·5	9·4
28	15 38 26·74	15 40 16·42	5·09	0·26	22 30 23·8	22 33 7·5	10·0	3·7	9·9
30	15 41 39·42	15 42 33·12	2·87	0·28	22 33 11·2	22 30 23·0	+ 3·3	3·8	10·3
Nov. 1	15 42 54·97	15 42 42·52	0·21	0·29	22 24 29·6	22 15 17·4	18·8	4·1	10·8
			—						
3	15 41 53·67	15 40 26·84	2·82	0·31	22 2 33·6	21 46 6·1	36·4	4·3	11·4
5	15 38 21·29	15 35 37·39	6·04	0·32	21 25 45·5	21 1 27·1	55·8	4·5	11·9
7	15 32 16·79	15 28 22·83	9·08	0·33	20 33 12·6	20 1 13·2	75·4	4·6	12·3

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	Sid. Time of Semid. passing Merid.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Semidiameter.	Hor. Par.
	h m s	h m s	— s	s	*South.* ° ′ ″	*South.* ° ′ ″	+ ″	″	″
Nov. 9	15 24 0·56	15 19 16·70	11·43	0·33	19 25 50·9	18 47 40·9	92·2	4·7	12·6
11	{15 14 39·57 / 15 9 18·46}	15 4 23·17	{10·55 / 10·49}	{0·33 / 0·33}	{18 7 22·6 / 17 26 25·2}	16 45 27·5	{208·0 / 103·1}	{4·8 / 4·8}	{12·7 / 12·7}
13	14 59 43·30	14 55 27·60	11·21	0·32	16 5 51·1	15 28 45·5	96·3	4·7	12·5
15	14 51 43·46	14 48 36·50	8·60	0·32	14 55 12·2	14 26 0·3	78·7	4·6	12·1
17	14 46 10·44	14 44 27·31	5·20	0·31	14 1 45·1	13 42 46·4	54·1	4·4	11·5
19	14 43 27·44	14 43 9·93	1·60	0·29	13 29 10·4	13 20 51·0	27·3	4·1	10·9
			+						
21	14 43 32·96	14 44 33·99	1·77	0·27	13 17 33·5	13 18 56·2	2·2	3·9	10·3
							—		
23	14 46 10·11	14 48 18·22	4·69	0·26	13 24 33·6	13 33 58·3	19·0	3·7	9·7
25	14 50 55·26	14 53 58·24	7·10	0·24	13 46 42·2	14 2 18·2	35·6	3·5	9·2
27	14 57 24·42	15 1 11·18	9·04	0·23	14 20 19·9	14 40 23·5	47·8	3·3	8·7
29	15 5 16·20	15 9 37·43	10·56	0·22	15 2 6·8	15 25 10·2	56·1	3·1	8·3
Dec. 1	15 14 13·04	15 19 1·38	11·76	0·21	15 49 15·5	16 14 7·1	61·3	3·0	8·0
3	15 24 1·06	15 29 10·85	12·71	0·20	16 39 30·7	17 5 14·1	64·0	2·9	7·7
5	15 34 29·68	15 39 56·65	13·46	0·19	17 31 6·5	17 56 58·1	64·7	2·8	7·4
7	15 45 30·93	15 51 11·87	14·07	0·19	18 22 40·3	18 48 5·8	64·0	2·7	7·2
9	15 56 58·85	16 2 51·39	14·58	0·18	19 13 7·9	19 37 40·8	62·0	2·6	7·0
11	16 8 49·04	16 14 51·41	15·00	0·18	20 1 39·6	20 24 59·4	59·2	2·6	6·8
13	16 20 58·18	16 27 9·08	15·37	0·18	20 47 36·1	21 9 25·7	55·6	2·5	6·6
15	16 33 23·84	16 39 42·25	15·69	0·18	21 30 25·3	21 50 31·6	51·4	2·5	6·5
17	16 46 4·09	16 52 29·24	15·98	0·18	22 9 41·7	22 27 53·2	46·7	2·4	6·4
19	16 58 57·50	17 5 28·76	16·24	0·18	22 45 3·5	23 1 10·6	41·6	2·4	6·3
21	17 12 2·85	17 18 39·67	16·48	0·17	23 16 12·4	23 30 6·8	36·2	2·3	6·2
23	17 25 19·14	17 32 1·10	16·70	0·17	23 42 52·2	23 54 26·6	30·4	2·3	6·2
25	17 38 45·47	17 45 32·14	16·90	0·17	24 4 48·6	24 13 56·4	24·4	2·3	6·1
27	17 52 21·01	17 59 11·97	17·08	0·17	24 21 48·7	24 28 23·9	18·1	2·3	6·1
29	18 6 4·91	18 12 59·76	17·25	0·17	24 33 40·7	24 37 37·8	11·6	2·3	6·0
31	18 19 56·41	18 26 54·72	17·40	0·17	24 40 14·0	24 41 27·7	4·8	2·3	6·0

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	h m s	h m s	+ s	s	South. ° ′ ″	South. ° ′ ″	− ″	″	″
Jan. 1	16 36 58·31	16 42 11·61	13·03	0·44	20 40 35·9	20 53 2·7	31·8	6·2	6·4
3	16 47 25·89	16 52 41·13	13·12	0·44	21 4 54·3	21 16 10·1	28·9	6·1	6·3
5	16 57 57·27	17 3 14·27	13·19	0·44	21 26 49·6	21 36 52·2	25·9	6·1	6·3
7	17 8 32·10	17 13 50·70	13·26	0·43	21 46 17·4	21 55 4·7	22·8	6·0	6·2
9	17 19 10·04	17 24 30·05	13·32	0·43	22 3 13·8	22 10 44·1	19·6	6·0	6·2
11	17 29 50·69	17 35 11·91	13·37	0·42	22 17 35·2	22 23 46·9	16·3	5·9	6·1
13	17 40 33·65	17 45 55·86	13·42	0·42	22 29 18·8	22 34 10·6	13·0	5·9	6·1
15	17 51 18·49	17 56 41·48	13·45	0·42	22 38 21·9	22 41 52·5	9·6	5·8	6·0
17	18 2 4·77	18 7 28·31	13·48	0·42	22 44 42·3	22 46 51·0	6·2	5·8	6·0
19	18 12 52·05	18 18 15·92	13·49	0·42	22 48 18·6	22 49 4·8	2·8	5·8	6·0
							+		
21	18 23 39·87	18 29 3·84	13·50	0·42	22 49 9·6	22 48 32·9	0·7	5·7	5·9
23	18 34 27·77	18 39 51·62	13·50	0·42	22 47 14·7	22 45 15·0	4·1	5·7	5·9
25	18 45 15·32	18 50 38·82	13·48	0·42	22 42 33·8	22 39 11·2	7·6	5·7	5·9
27	18 56 2·06	19 1 25·00	13·46	0·41	22 35 7·2	22 30 22·0	11·0	5·6	5·8
29	19 6 47·57	19 12 9·73	13·43	0·41	22 24 55·7	22 18 48·6	14·4	5·6	5·8
31	19 17 31·43	19 22 52·60	13·39	0·40	22 12 0·7	22 4 32·5	17·8	5·6	5·8
Feb. 2	19 28 13·21	19 33 33·19	13·35	0·39	21 56 24·1	21 47 35·9	21·2	5·5	5·7
4	19 38 52·50	19 44 11·10	13·29	0·39	21 38 8·3	21 28 1·6	24·5	5·5	5·7
6	19 49 28·93	19 54 45·95	13·23	0·39	21 17 16·2	21 5 52·5	27·7	5·5	5·7
8	20 0 2·13	20 5 17·42	13·16	0·38	20 53 51·0	20 41 12·2	30·8	5·4	5·6
10	20 10 31·80	20 15 45·22	13·08	0·38	20 27 56·6	20 14 4·7	33·9	5·4	5·6
12	20 20 57·66	20 26 9·08	13·00	0·38	19 59 36·9	19 44 34·0	36·9	5·4	5·6
14	20 31 19·47	20 36 28·80	12·91	0·37	19 28 56·5	19 12 44·9	39·8	5·3	5·5
16	20 41 37·05	20 46 44·21	12·82	0·37	18 55 59·9	18 38 42·0	42·6	5·3	5·5
18	20 51 50·26	20 56 55·20	12·73	0·37	18 20 51·9	18 2 30·2	45·2	5·3	5·5
20	21 1 59·01	21 7 1·68	12·64	0·37	17 43 37·6	17 24 14·6	47·8	5·3	5·5
22	21 12 3·23	21 17 3·64	12·54	0·36	17 4 22·0	16 44 0·4	50·3	5·2	5·4
24	21 22 2·91	21 27 1·06	12·45	0·36	16 23 10·6	16 1 53·1	52·7	5·2	5·4
26	21 31 58·08	21 36 53·99	12·35	0·36	15 40 8·7	15 17 58·1	54·9	5·2	5·4
28	21 41 48·81	21 46 42·53	12·26	0·36	14 55 22·0	14 32 21·0	57·0	5·2	5·4
Mar. 2	21 51 35·17	21 56 26·74	12·17	0·35	14 8 55·9	13 45 7·4	59·0	5·1	5·3
4	22 1 17·26	22 6 6·74	12·08	0·35	13 20 56·3	12 56 23·4	60·9	5·1	5·3
6	22 10 55·21	22 15 42·68	12·00	0·35	12 31 29·3	12 6 14·8	62·7	5·1	5·3
8	22 20 29·18	22 25 14·72	11·92	0·35	11 40 40·6	11 14 47·5	64·3	5·1	5·3
10	22 29 59·33	22 34 43·02	11·84	0·34	10 48 36·3	10 22 7·7	65·8	5·0	5·2
12	22 39 25·84	22 44 7·80	11·77	0·34	9 55 22·6	9 28 21·5	67·2	5·0	5·2
14	22 48 48·93	22 53 29·27	11·70	0·34	9 1 5·2	8 33 34·6	68·5	5·0	5·2
16	22 58 8·85	23 2 47·69	11·63	0·34	8 5 50·3	7 37 53·0	69·6	5·0	5·2
18	23 7 25·84	23 12 3·32	11·58	0·34	7 9 43·4	6 41 22·4	70·6	5·0	5·2
20	23 16 40·17	23 21 16·44	11·52	0·34	6 12 50·6	5 44 8·7	71·5	5·0	5·2
22	23 25 52·16	23 30 27·37	11·48	0·34	5 15 17·4	4 46 17·5	72·3	5·0	5·2
24	23 35 2·11	23 39 36·42	11·44	0·33	4 17 9·6	3 47 54·5	73·0	4·9	5·1

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	h m s	h m s	+ s	s	*South.* ° ′ ″	*South.* ° ′ ″	+ ″	″	″
Mar. 26	23 44 10·34	23 48 43·92	11·41	0·33	3 18 32·8	2 49 5·3	73·5	4·9	5·1
28	23 53 17·19	23 57 50·19	11·38	0·33	2 19 32·6	1 49 55·5	74·0	4·9	5·1
30	0 2 22·97	0 6 55·57	11·36	0·33	1 20 14·7	0 50 30·9	74·3	4·9	5·1
Apr. 1	0 11 28·04	0 16 0·41	11·35	0·33	0 20 44·8	*North.*	74·5	4·9	5·1
					North.	0 9 2·9			
3	0 20 32·73	0 25 5·04	11·35	0·33	0 38 51·5	1 8 40·3	74·5	4·9	5·1
5	0 29 37·36	0 34 9·75	11·35	0·33	1 38 28·5	2 8 15·4	74·5	4·9	5·1
7	0 38 42·24	0 43 14·88	11·36	0·32	2 38 0·3	3 7 42·5	74·3	4·8	5·0
9	0 47 47·70	0 52 20·75	11·37	0·32	3 37 21·1	4 6 55·5	74·0	4·8	5·0
11	0 56 54·04	1 1 27·65	11·39	0·32	4 36 24·9	5 5 48·7	73·6	4·8	5·0
13	1 6 1·60	1 10 35·92	11·42	0·32	5 35 6·2	6 4 16·5	73·1	4·8	5·0
15	1 15 10·65	1 19 45·84	11·46	0·32	6 33 19·1	7 2 13·1	72·4	4·8	5·0
17	1 24 21·52	1 28 57·73	11·50	0·32	7 30 57·9	7 59 32·7	71·7	4·8	5·0
19	1 33 34·51	1 38 11·90	11·55	0·32	8 27 56·9	8 56 9·6	70·8	4·8	5·0
21	1 42 49·92	1 47 28·62	11·60	0·32	9 24 10·2	9 51 58·0	69·8	4·8	5·0
23	1 52 8·04	1 56 48·22	11·66	0·32	10 19 32·3	10 46 52·2	68·6	4·8	5·0
25	2 1 29·18	2 6 10·96	11·73	0·33	11 13 57·2	11 40 46·5	67·4	4·8	5·0
27	2 10 53·60	2 15 37·10	11·80	0·33	12 7 19·4	12 33 35·0	66·0	4·8	5·0
29	2 20 21·56	2 25 6·94	11·87	0·33	12 59 32·7	13 25 11·8	64·5	4·8	5·0
May 1	2 29 53·29	2 34 40·63	11·95	0·33	13 50 31·4	14 15 30·9	62·9	4·8	5·0
3	2 39 28·99	2 44 18·39	12·03	0·33	14 40 9·5	15 4 26·4	61·2	4·8	5·0
5	2 49 8·83	2 54 0·35	12·12	0·33	15 28 20·9	15 51 52·2	59·3	4·8	5·0
7	2 58 52·95	3 3 46·65	12·21	0·33	16 14 59·6	16 37 42·4	57·3	4·8	5·0
9	3 8 41·46	* * *	12·31	0·33	16 59 59·7	* * *	55·2	4·8	5·0
11	3 13 37·38	3 18 34·42	12·35	0·33	17 21 50·9	17 43 15·2	54·1	4·8	5·0
13	3 23 32·59	3 28 31·89	12·45	0·34	18 4 12·0	18 24 40·4	51·8	4·8	5·0
15	3 33 32·31	3 38 33·85	12·54	0·34	18 44 39·8	19 4 9·4	49·4	4·8	5·0
17	3 43 36·51	3 48 40·29	12·63	0·34	19 23 8·6	19 41 36·7	46·8	4·8	5·0
19	3 53 45·17	3 58 51·16	12·72	0·34	19 59 33·0	20 16 56·9	44·2	4·8	5·0
21	4 3 58·23	4 9 6·37	12·82	0·34	20 33 47·8	20 50 4·9	41·4	4·8	5·0
23	4 14 15·57	4 19 25·81	12·91	0·34	21 5 47·7	21 20 55·4	38·6	4·8	5·0
25	4 24 37·07	4 29·49·32	12·99	0·34	21 35 27·6	21 49 23·7	35·6	4·8	5·0
27	4 35 2·54	4 40 16·69	13·07	0·35	22 2 43·1	22 15 25·1	32·5	4·8	5·0
29	4 45 31·76	4 50 47·69	13·15	0·35	22 27 29·4	22 38 55·4	29·4	4·8	5·0
31	4 56 4·46	5 1 22·04	13·22	0·35	22 49 42·5	22 59 50·3	26·1	4·8	5·0
June 2	5 6 40·37	5 11 59·41	13·28	0·35	23 9 18·3	23 18 6·2	22·8	4·8	5·0
4	5 17 19·11	5 22 39·43	13·33	0·35	23 26 13·6	23 33 39·9	19·5	4·8	5·0
6	5 28 0·31	5 33 21·69	13·38	0·35	23 40 25·0	23 46 28·5	16·0	4·8	5·0
8	5 38 43·51	5 44 5·73	13·42	0·35	23 51 50·0	23 56 29·4	12·5	4·8	5·0
10	5 49 28·27	5 54 51·09	13·45	0·35	24 0 26·4	24 3 40·8	9·0	4·8	5·0
12	6 0 14·11	6 5 37·28	13·47	0·35	24 6 12·4	24 8 1·2	5·4	4·8	5·0
14	6 11 0·53	6 16 23·81	13·47	0·35	24 9 7·0	24 9 29·8	1·8	4·8	5·0
16	6 21 47·05	6 27 10·19	13·47	0·35	24 9 9·5	24 8 6·1	— 1·7	4·8	5·0

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	h m s	h m s	+ s	s	*North.* ° ′ ″	*North.* ° ′ ″	— ″	″	″
June 18	6 32 33·17	6 37 55·92	13·45	0·36	24 6 19·7	24 3 50·3	5·3	4·9	5·1
20	6 43 18·40	6 48 40·54	13·43	0·36	24 0 38·0	23 56 43·0	8·9	4·9	5·1
22	6 54 2·27	6 59 23·56	13·40	0·36	23 52 5·4	23 46 45·3	12·5	4·9	5·1
24	7 4 44·34	7 10 4·57	13·36	0·36	23 40 42·9	23 33 58·6	16·0	4·9	5·1
26	7 15 24·18	7 20 43·14	13·30	0·36	23 26 32·5	23 18 24·9	19·5	4·9	5·1
28	7 26 1·39	7 31 18·88	13·24	0·36	23 9 36·2	23 0 6·7	22·9	4·9	5·1
30	7 36 35·56	7 41 51·40	13·18	0·36	22 49 56·8	22 39 6·9	26·2	4·9	5·1
July 2	7 47 6·35	7 52 20·38	13·11	0·36	22 27 37·3	22 15 28·7	29·5	5·0	5·2
4	7 57 33·43	8 2 45·47	13·02	0·36	22 2 41·3	21 49 15·8	32·8	5·0	5·2
6	8 7 56·48	8 13 6·41	12·93	0·36	21 35 12·7	21 20 32·5	35·9	5·0	5·2
8	8 18 15·24	8 23 22·94	12·84	0·36	21 5 15·8	20 49 23·2	38·9	5·0	5·2
10	8 28 29·48	8 33 34·83	12·75	0·36	20 32 55·2	20 15 52·5	41·9	5·0	5·2
12	8 38 38·98	8 43 41·91	12·65	0·36	19 58 15·8	19 40 5·7	44·7	5·1	5·3
14	8 48 43·61	8 53 44·07	12·55	0·36	19 21 22·8	19 2 7·7	47·5	5·1	5·3
16	8 58 43·27	9 3 41·21	12·44	0·36	18 42 21·3	18 22 4·1	50·1	5·1	5·3
18	9 8 37·89	9 13 33·30	12·34	0·36	18 1 16·8	17 40 0·1	52·6	5·1	5·3
20	9 18 27·45	9 23 20·35	12·23	0·36	17 18 14·8	16 56 1·5	55·0	5·2	5·4
22	9 28 12·01	9 33 2·43	12·13	0·36	16 33 20·9	16 10 13·7	57·2	5·2	5·4
24	9 37 51·62	9 42 39·61	12·02	0·36	15 46 40·5	15 22 42·1	59·4	5·2	5·4
26	9 47 26·40	9 52 12·02	11·92	0·36	14 58 19·3	14 33 32·7	61·4	5·2	5·4
28	9 56 56·48	10 1 39·81	11·83	0·37	14 8 23·2	13 42 51·3	63·4	5·3	5·5
30	10 6 22·03	10 11 3·16	11·74	0·37	13 16 57·8	12 50 43·5	65·2	5·3	5·5
Aug. 1	10 15 43·22	10 20 22·23	11·65	0·37	12 24 9·0	11 57 15·1	66·8	5·3	5·5
3	10 25 0·23	10 29 37·25	11·56	0·37	11 30 2·5	11 2 32·0	68·4	5·4	5·6
5	10 34 13·30	10 38 48·43	11·48	0·37	10 34 44·3	10 6 40·2	69·8	5·4	5·6
7	10 43 22·65	10 47 56·01	11·41	0·37	9 38 20·3	9 9 45·5	71·1	5·4	5·6
9	10 52 28·53	10 57 0·24	11·34	0·37	8 40 56·5	8 11 53·9	72·3	5·5	5·7
11	11 1 31·17	11 6 1·36	11·27	0·37	7 42 38·6	7 13 11·3	73·4	5·5	5·7
13	11 10 30·84	11 14 59·65	11·21	0·37	6 43 32·7	6 13 43·5	74·3	5·5	5·7
15	11 19 27·83	11 23 55·42	11·16	0·38	5 43 44·4	5 13 36·2	75·2	5·6	5·8
17	11 28 22·44	11 32 48·96	11·12	0·38	4 43 19·5	4 12 55·1	75·9	5·6	5·8
19	11 37 14·99	11 41 40·59	11·08	0·38	3 42 23·6	3 11 45·8	76·4	5·7	5·9
21	11 46 5·80	11 50 30·66	11·04	0·38	2 41 2·3	2 10 13·7	76·9	5·7	5·9
23	11 54 55·21	11 59 19·50	11·02	0·39	1 39 20·9	1 8 24·4	77·3	5·8	6·0
25	12 3 43·57	12 8 7·47	11·00	0·39	0 37 24·9	0 6 23·2	77·5	5·8	6·0
27	12 12 31·24	12 16 54·92	10·99	0·40	*South.* 0 24 40·2	*South.* 0 55 44·4	77·7	5·9	6·1
29	12 21 18·57	12 25 42·21	10·99	0·40	1 26 48·8	1 57 52·7	77·7	5·9	6·1
31	12 30 5·89	12 34 29·66	10·99	0·40	2 28 55·4	2 59 56·2	77·6	5·9	6·1
Sept. 2	12 38 53·56	12 43 17·62	11·00	0·40	3 30 54·4	4 1 49·3	77·4	6·0	6·2
4	12 47 41·90	12 52 6·42	11·02	0·41	4 32 40·2	5 3 26·3	77·0	6·0	6·2
6	12 56 31·22	13 0 56·35	11·04	0·41	5 34 7·0	6 4 41·4	76·6	6·1	6·3
8	13 5 21·84	13 9 47·72	11·07	0·41	6 35 9·0	7 5 28·8	76·0	6·1	6·3

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	Sid. Time of Semid' passing Merid.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Semidiameter.	Hor. Par.
	h m s	h m s	+ s	s	*South.* ° ′ ″	*South.* ° ′ ″	− ″	″	″
Sept. 10	13 14 14·04	13 18 40·83	11·11	0·42	7 35 40·2	8 5 42·6	75·3	6·2	6·4
12	13 23 8·13	13 27 35·96	11·15	0·42	8 35 35·1	9 5 17·1	74·5	6·2	6·5
14	13 32 4·36	13 36 33·38	11·20	0·42	9 34 47·8	10 4 6·6	73·5	6·2	6·5
16	13 41 3·04	13 45 33·39	11·25	0·43	10 33 12·6	11 2 5·2	72·5	6·3	6·6
18	13 50 4·46	13 54 36·27	11·31	0·43	11 30 43·6	11 59 7·2	71·3	6·3	6·6
20	13 59 8·87	14 3 42·29	11·38	0·43	12 27 15·2	12 55 6·9	70·0	6·4	6·7
22	14 8 16·55	14 12 51·69	11·45	0·43	13 22 41·6	13 49 58·5	68·6	6·4	6·7
24	14 17 27·73	14 22 4·71	11·52	0·44	14 16 57·0	14 43 36·2	67·0	6·5	6·8
26	14 26 42·65	14 31 21·58	11·60	0·45	15 9 55·5	15 35 54·0	65·4	6·6	6·9
28	14 36 1·51	14 40 42·47	11·68	0·46	16 1 31·1	16 26 46·0	63·6	6·7	7·0
30	14 45 24·48	14 50 7·55	11·77	0·46	16 51 37·9	17 16 6·2	61·7	6·7	7·0
Oct. 2	14 54 51·69	14 59 36·92	11·86	0·47	17 40 10·0	18 3 48·6	59·6	6·8	7·1
4	15 4 23·24	15 9 10·66	11·95	0·48	18 27 1·3	18 49 47·3	57·5	6·9	7·2
6	15 13 59·17	15 18 48·77	12·04	0·49	19 12 5·9	19 33 56·3	55·2	7·0	7·3
8	15 23 39·47	15 28 31·25	12·14	0·50	19 55 17·8	20 16 9·7	52·8	7·1	7·4
10	15 33 24·11	15 38 18·03	12·23	0·50	20 36 31·2	20 56 21·7	50·3	7·2	7·5
12	15 43 13·00	15 48 9·00	12·31	0·51	21 15 40·5	21 34 26·9	47·6	7·2	7·5
14	15 53 6·01	15 58 4·01	12·40	0·52	21 52 40·2	22 10 19·9	44·9	7·3	7·6
16	16 3 2·98	16 8 2·88	12·48	0·53	22 27 25·2	22 43 55·5	42·0	7·4	7·7
18	16 13 3·71	16 18 5·42	12·55	0·54	22 59 50·2	23 15 8·8	39·0	7·5	7·8
20	16 23 7·98	16 28 11·36	12·62	0·55	23 29 50·6	23 43 55·1	36·0	7·6	7·9
22	16 33 15·52	16 38 20·42	12·69	0·56	23 57 21·8	24 10 10·2	32·8	7·7	8·0
24	16 43 26·02	16 48 32·27	12·75	0·57	24 22 19·7	24 33 49·9	29·6	7·8	8·1
26	16 53 39·13	16 58 46·55	12·80	0·58	24 44 40·4	24 54 50·7	26·3	7·9	8·2
28	17 3 54·47	17 9 2·83	12·84	0·59	25 4 20·4	25 13 9·1	22·9	8·0	8·3
30	17 14 11·57	17 19 20·62	12·87	0·60	25 21 16·6	25 28 42·4	19·4	8·1	8·4
Nov. 1	17 24 29·92	17 29 39·39	12·89	0·61	25 35 26·3	25 41 28·1	16·0	8·3	8·6
3	17 34 48·97	17 39 58·57	12·90	0·62	25 46 47·6	25 51 24·4	12·4	8·4	8·7
5	17 45 8·12	17 50 17·55	12·89	0·63	25 55 18·6	25 58 30·0	8·9	8·5	8·8
7	17 55 26·76	18 0 35·69	12·88	0·64	26 0 58·6	26 2 44·3	5·3	8·7	9·0
9	18 5 44·24	18 10 52·33	12·85	0·65	26 3 47·1	26 4 7·0	1·7	8·8	9·1
11	18 15 59·87	18 21 6·79	12·80	0·66	26 3 44·2	26 2 38·7	+ 1·8	8·9	9·3
13	18 26 13·00	18 31 18·42	12·74	0·66	26 0 50·6	25 58 20·1	5·4	9·0	9·4
15	18 36 22·98	18 41 26·59	12·67	0·67	25 55 7·6	25 51 13·1	8·9	9·1	9·5
17	18 46 29·17	18 51 30·65	12·59	0·69	25 46 37·0	25 41 19·6	12·4	9·3	9·7
19	18 56 30·96	19 1 30·01	12·49	0·70	25 35 21·2	25 28 42·2	15·8	9·4	9·8
21	19 6 27·75	19 11 24·10	12·38	0·71	25 21 23·0	25 13 24·1	19·1	9·6	10·0
23	19 16 18·99	19 21 12·36	12·26	0·72	25 4 45·8	24 55 28·6	22·4	9·8	10·2
25	19 26 4·15	19 30 54·29	12·13	0·73	24 45 33·0	24 34 59·6	25·6	10·0	10·4
27	19 35 42·71	19 40 29·35	11·98	0·75	24 23 49·0	24 12 1·7	28·7	10·2	10·6
29	19 45 14·15	19 49 57·05	11·82	0·76	23 59 38·5	23 46 39·8	31·7	10·4	10·8
Dec. 1	19 54 37·98	19 59 16·89	11·66	0·77	23 33 6·5	23 18 59·1	34·6	10·6	11·0

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	h m s	h m s	+ s	s	*South.* ° ′ ″	*South.* ° ′ ″	+ ″	″	″
Dec. 3	20 3 53·71	20 8 28·39	11·49	0·78	23 4 18·5	22 49 5·3	37·4	10·8	11·2
5	20 13 0·86	20 17 31·07	11·31	0·79	22 33 20·5	22 17 4·7	40·0	11·0	11·4
7	20 21 58·96	20 26 24·47	11·11	0·80	22 0 18·9	21 43 3·7	42·5	11·2	11·6
9	20 30 47·34	20 35 8·13	10·91	0·80	21 25 20·2	21 7 9·1	44·9	11·3	11·8
11	20 39 26·17	20 43 41·63	10·70	0·81	20 48 31·3	20 29 27·8	47·1	11·6	12·1
13	20 47 54·46	20 52 4·61	10·48	0·83	20 9 59·3	19 50 6·7	49·2	11·9	12·4
15	20 56 12·03	21 0 16·67	10·25	0·85	19 29 51·1	19 9 13·2	51·1	12·1	12·6
17	21 4 18·50	21 8 17·45	10·02	0·87	18 48 14·0	18 26 54·5	52·9	12·4	12·9
19	21 12 13·50	21 16 6·60	9·77	0·89	18 5 15·4	17 43 17·9	54·5	12·7	13·2
21	21 19 56·71	21 23 43·79	9·52	0·91	17 21 2·6	16 58 30·7	56·0	13·0	13·5
23	21 27 27·78	21 31 8·65	9·27	0·93	16 35 42·9	16 12 40·4	57·3	13·3	13·8
25	21 34 46·34	21 38 20·80	9·00	0·94	15 49 24·0	15 25 54·8	58·5	13·7	14·2
27	21 41 51·98	21 45 19·81	8·73	0·96	15 2 13·7	14 38 21·7	59·5	13·9	14·5
29	21 48 44·23	21 52 5·17	8·45	0·98	14 14 20·0	13 50 9·6	60·3	14·3	14·9
31	21 55 22·57	21 58 36·34	8·15	1·00	13 25 51·6	13 1 27·1	60·9	14·7	15·3

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	h m s	h m s	+ s	s	*South.* ° ′ ″	*South.* ° ′ ″	+ ″	″	″
Jan. 1	23 52 41·43	23 55 9·73	6·18	0·22	1 9 24·5	0 51 54·6	43·8	3·4	6·5
3	23 57 38·09	0 0 6·50	6·18	0·22	0 34 24·8	0 16 55·3	43·7	3·3	6·4
					North.	*North.*			
5	0 2 34·98	0 5 3·54	6·19	0·22	0 0 33·7	0 18 2·2	43·7	3·3	6·3
7	0 7 32·17	0 10 0·90	6·20	0·22	0 35 30·0	0 52 57·0	43·6	3·3	6·3
9	0 12 29·73	0 14 58·65	6·20	0·22	1 10 23·2	1 27 48·3	43·6	3·2	6·2
11	0 17 27·66	0 19 56·77	6·21	0·21	1 45 12·2	2 2 34·7	43·5	3·2	6·1
13	0 22 25·98	0 24 55·31	6·22	0·21	2 19 55·8	2 37 15·3	43·3	3·1	6·0
15	0 27 24·74	0 29 54·28	6·23	0·21	2 54 33·0	3 11 48·7	43·2	3·1	5·9
17	0 32 23·93	0 34 53·68	6·24	0·21	3 29 2·4	3 46 13·9	43·0	3·1	5·9
19	0 37 23·55	0 39 53·53	6·25	0·20	4 3 23·1	4 20 29·7	42·8	3·0	5·8
21	0 42 23·63	0 44 53·84	6·26	0·20	4 37 33·7	4 54 34·9	42·6	3·0	5·7
23	0 47 24·18	0 49 54·64	6·27	0·19	5 11 33·2	5 28 28·5	42·4	2·9	5·6
25	0 52 25·23	0 54 55·95	6·28	0·19	5 45 20·7	6 2 9·6	42·1	2·9	5·6
27	0 57 26·81	0 59 57·81	6·29	0·19	6 18 55·1	6 35 37·1	41·8	2·8	5·5
29	1 2 28·96	1 5 0·27	6·30	0·19	6 52 15·5	7 8 50·1	41·6	2·8	5·5
31	1 7 31·73	1 10 3·35	6·31	0·18	7 25 21·0	7 41 47·9	41·2	2·8	5·4
Feb. 2	1 12 35·15	1 15 7·13	6·32	0·18	7 58 10·8	8 14 29·5	40·9	2·8	5·4
4	1 17 39·29	1 20 11·65	6·34	0·18	8 30 43·9	8 46 54·0	40·5	2·7	5·3
6	1 22 44·20	1 25 16·95	6·36	0·18	9 2 59·6	9 19 0·6	40·1	2·7	5·3
8	1 27 49·91	1 30 23·08	6·38	0·18	9 34 56·9	9 50 48·3	39·7	2·7	5·2
10	1 32 56·46	1 35 30·06	6·40	0·18	10 6 34·7	10 22 16·0	39·3	2·7	5·2
12	1 38 3·86	1 40 37·89	6·41	0·17	10 37 52·1	10 53 22·7	38·9	2·6	5·1
14	1 43 12·14	1 45 46·60	6·43	0·17	11 8 47·9	11 24 7·3	38·4	2·6	5·1
16	1 48 21·28	1 50 56·18	6·45	0·17	11 39 21·1	11 54 28·9	38·0	2·6	5·0
18	1 53 31·31	1 56 6·66	6·47	0·17	12 9 30·7	12 24 26·5	37·5	2·6	5·0

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	h m s	h m s	— s	s	*North.* ° ′ ″	*North.* ° ′ ″	+ ″	″	″
Jan. 1	9 55 44·98	9 55 29·96	0·61	1·48	13 39 43·5	13 41 18·1	3·9	20·0	1·9
3	9 55 14·26	9 54 57·87	0·67	1·49	13 42 56·2	13 44 37·7	4·2	20·2	1·9
5	9 54 40·82	9 54 23·11	0·72	1·50	13 46 22·5	13 48 10·5	4·4	20·3	1·9
7	9 54 4·74	9 53 45·73	0·78	1·50	13 50 1·7	13 51 56·1	4·7	20·3	1·9
9	9 53 26·09	9 53 5·84	0·83	1·50	13 53 53·5	13 55 53·9	5·0	20·4	1·9
11	9 52 44·98	9 52 23·54	0·88	1·51	13 57 57·1	14 0 3·1	5·2	20·5	1·9
13	9 52 1·51	9 51 38·92	0·93	1·51	14 2 11·8	14 4 23·1	5·4	20·6	1·9
15	9 51 15·79	9 50 52·12	0·97	1·52	14 6 36·9	14 8 53·1	5·6	20·7	1·9
17	9 50 27·94	9 50 3·27	1·02	1·53	14 11 11·6	14 13 32·2	5·8	20·8	1·9
19	9 49 38·11	9 49 12·48	1·06	1·54	14 15 54·9	14 18 19·6	6·0	20·9	1·9
21	9 48 46·41	9 48 19·91	1·10	1·54	14 20 46·1	14 23 14·4	6·1	21·0	1·9
23	9 47 53·00	9 47 25·69	1·13	1·54	14 25 44·4	14 28 15·9	6·3	21·0	1·9
25	9 46 58·01	9 46 29·98	1·16	1·55	14 30 48·8	14 33 23·1	6·4	21·0	1·9
27	9 46 1·60	9 45 32·90	1·19	1·56	14 35 58·6	14 38 35·3	6·5	21·0	2·0
29	9 45 3·90	9 44 34·63	1·21	1·56	14 41 12·9	14 43 51·4	6·6	21·0	2·0
31	9 44 5·09	9 43 35·31	1·23	1·56	14 46 30·7	14 49 10·7	6·7	21·0	2·0
Feb. 2	9 43 5·31	9 42 35·11	1·25	1·56	14 51 51·2	14 54 32·1	6·7	21·1	2·0
4	9 42 4·74	9 41 34·22	1·27	1·56	14 57 13·4	14 59 54·8	6·7	21·1	2·0
6	9 41 3·57	9 40 32·81	1·28	1·56	15 2 36·3	15 5 17·7	6·7	21·1	2·0
8	9 40 1·97	9 39 31·07	1·29	1·56	15 7 59·0	15 10 39·9	6·7	21·1	2·0
10	9 39 0·14	9 38 29·20	1·29	1·56	15 13 20·4	15 16 0·3	6·7	21·1	2·0
12	9 37 58·26	9 37 27·36	1·29	1·56	15 18 39·5	15 21 17·8	6·6	21·1	2·0
14	9 36 56·52	9 36 25·77	1·28	1·56	15 23 55·2	15 26 31·3	6·5	21·1	2·0
16	9 35 55·12	9 35 24·60	1·27	1·56	15 29 6·7	15 31 40·7	6·4	21·1	2·0
18	9 34 54·23	9 34 24·03	1·26	1·56	15 34 13·3	15 36 44·5	6·3	21·1	2·0
20	9 33 54·03	9 33 24·25	1·25	1·57	15 39 14·1	15 41 42·1	6·2	21·0	2·0
22	9 32 54·70	9 32 25·41	1·23	1·57	15 44 8·4	15 46 32·9	6·0	21·0	2·0
24	9 31 56·40	9 31 27·68	1·20	1·57	15 48 55·4	15 51 15·9	5·9	21·0	1·9
26	9 30 59·27	9 30 31·20	1·18	1·57	15 53 34·3	15 55 50·6	5·7	21·0	1·9
28	9 30 3·48	9 29 36·14	1·15	1·57	15 58 4·7	16 0 16·4	5·5	21·0	1·9
Mar. 2	9 29 9·18	9 28 42·63	1·11	1·56	16 2 25·7	16 4 32·6	5·3	20·9	1·9
4	9 28 16·51	9 27 50·84	1·08	1·55	16 6 37·0	16 8 38·7	5·1	20·8	1·9
6	9 27 25·63	9 27 0·90	1·04	1·55	16 10 37·7	16 12 34·0	4·8	20·8	1·9
8	9 26 36·67	9 26 12·94	1·00	1·54	16 14 27·5	16 16 18·1	4·7	20·7	1·9
10	9 25 49·75	9 25 27·11	0·95	1·54	16 18 5·8	16 19 50·4	4·4	20·6	1·9
12	9 25 5·03	9 24 43·52	0·91	1·53	16 21 32·0	16 23 10·5	4·2	20·5	1·9
14	9 24 22·60	9 24 2·28	0·86	1·53	16 24 45·9	16 26 18·1	3·9	20·4	1·9
16	9 23 42·58	9 23 23·51	0·81	1·52	16 27 47·0	16 29 12·7	3·6	20·3	1·9
18	9 23 5·07	9 22 47·27	0·76	1·51	16 30 35·1	16 31 54·1	3·4	20·2	1·9
20	9 22 30·13	9 22 13·66	0·70	1·51	16 33 9·8	16 34 22·1	3·1	20·1	1·9
22	9 21 57·87	9 21 42·75	0·64	1·51	16 35 31·0	16 36 36·6	2·8	20·0	1·9
24	9 21 28·32	9 21 14·58	0·59	1·50	16 37 38·7	16 38 37·4	2·5	19·9	1·9
26	9 21 1·53	9 20 49·18	0·53	1·49	16 39 32·7	16 40 24·6	2·2	19·8	1·8

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	h m s	h m s	— s	s	*North.* ° ′ ″	*North.* ° ′ ″	+ ″	″	″
Mar. 28	9 20 37·54	9 20 26·62	0·47	1·48	16 41 13·0	16 41 57·9	1·9	19·7	1·8
30	9 20 16·41	9 20 6·92	0·41	1·48	16 42 39·4	16 43 17·4	1·7	19·6	1·8
Apr. 1	9 19 58·16	9 19 50·13	0·35	1·47	16 43 51·9	16 44 22·9	1·4	19·5	1·8
3	9 19 42·83	9 19 36·27	0·29	1·47	16 44 50 3	16 45 14·3	1·1	19·5	1·8
5	9 19 30·45	9 19 25·37	0·23	1·46	16 45 34·7	16 45 51·6	0·8	19·4	1·8
7	9 19 21·04	9 19 17·45	0·17	1·45	16 46 5·0	16 46 14·9	0·5	19·3	1·8
9	9 19 14·61	9 19 12·52	0·10	1·44	16 46 21·3	16 46 24·2	0·2	19·2	1·8
11	9 19 11·18	9 19 10·58	0·04	1·43	16 46 23·5	16 46 19·4	— 0·1	19·0	1·8
13	9 19 10·73	9 19 11·63	+ 0·02	1·42	16 46 11·8	16 46 0·8	0·4	18·9	1·8
15	9 19 13·27	9 19 15·65	0·08	1·41	16 45 46·2	16 45 28·3	0·7	18·7	1·7
17	9 19 18·76	9 19 22·61	0·15	1·40	16 45 6·9	16 44 42·1	1·0	18·6	1·7
19	9 19 27·19	9 19 32·49	0·21	1·40	16 44 14·0	16 43 42·4	1·2	18·5	1·7
21	9 19 38·51	9 19 45·24	0·27	1·39	16 43 7·5	16 42 29·4	1·5	18·5	1·7
23	9 19 52·69	9 20 0·85	0·33	1·39	16 41 47·9	16 41 3·1	1·8	18·4	1·7
25	9 20 9·71	9 20 19·26	0·38	1·38	16 40 15·2	16 39 24·0	2·1	18·2	1·7
27	9 20 29·51	9 20 40·45	0·44	1·37	16 38 29·6	16 37 32·0	2·3	18·1	1·7
29	9 20 52·07	9 21 4·37	0·50	1·35	16 36 31·1	16 35 27·1	2·6	18·0	1·7
May 1	9 21 17·34	9 21 30·98	0·55	1·34	16 34 20·0	16 33 9·6	2·9	17·9	1·7
3	9 21 45·29	9 22 0·26	0·61	1·33	16 31 56·0	16 30 39·4	3·1	17·8	1·6
5	9 22 15·88	9 22 32·15	0·66	1·32	16 29 19·6	16 27 56·8	3·4	17·7	1·6
7	9 22 49·06	9 23 6·62	0·72	1·31	16 26 30·9	16 25 1·9	3·6	17·5	1·6
9	9 23 24·81	9 23 43·62	0·77	1·31	16 23 30·0	16 21 55·0	3·9	17·4	1·6
11	9 24 3·05	9 24 23·10	0·82	1·30	16 20 17·1	16 18 36·2	4·1	17·3	1·6
13	9 24 43·75	9 25 4·99	0·87	1·29	16 16 52·4	16 15 5·7	4·4	17·2	1·6
15	9 25 26·82	9 25 49·23	0·92	1·28	16 13 16·1	16 11 23·6	4·6	17·2	1·6
17	9 26 12·22	9 26 35·78	0·97	1·28	16 9 28·3	16 7 30·2	4·9	17·1	1·6
19	9 26 59·90	9 27 24·56	1·02	1·27	16 5 29·3	16 3 25·7	5·1	17·0	1·6
21	9 27 49·77	9 28 15·52	1·06	1·27	16 1 19·3	15 59 10·3	5·3	16·9	1·6
23	9 28 41·80	9 29 8·60	1·11	1·26	15 56 58·6	15 54 44·2	5·5	16·8	1·6
25	9 29 35·92	9 30 3·74	1·15	1·25	15 52 27·2	15 50 7·5	5·8	16·7	1·5
27	9 30 32·06	9 31 0·88	1·19	1·24	15 47 45·3	15 45 20·4	6·0	16·6	1·5
29	9 31 30·19	9 31 59·98	1·23	1·24	15 42 53·0	15 40 23·1	6·2	16·5	1·5
31	9 32 30·24	9 33 0·98	1·27	1·23	15 37 50·6	15 35 15·6	6·4	16·4	1·5
June 2	9 33 32·18	9 34 3·85	1·31	1·22	15 32 38·0	15 29 58·0	6·6	16·3	1·5
4	9 34 35·97	9 35 8·53	1·35	1·21	15 27 15·5	15 24 30·6	6·8	16·2	1·5
6	9 35 41·53	9 36 14·96	1·38	1·20	15 21 43·2	15 18 53·4	7·0	16·1	1·5
8	9 36 48·81	9 37 23·08	1·42	1·19	15 16 1·3	15 13 6·8	7·2	16·0	1·5
10	9 37 57·76	9 38 32·84	1·45	1·19	15 10 9·9	15 7 10·8	7·4	15·9	1·5
12	9 39 8·32	9 39 44·19	1·49	1·19	15 4 9·4	15 1 5·8	7·6	15·9	1·5
14	9 40 20·44	9 40 57·06	1·52	1·18	14 57 59·9	14 54 51·9	7·8	15·9	1·5
16	9 41 34·05	9 42 11·40	1·55	1·18	14 51 41·7	14 48 29·3	8·0	15·8	1·5

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Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	Sid. Time of Semid' passing Merid.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Semidiameter.	Hor. Par.
	h m s	h m s	+ s	s	*North.* ° ′ ″	*North.* ° ′ ″	— ″	″	″
Nov. 13	11 34 10·16	11 34 44·30	1·43	1·13	3 59 13·0	3 55 45·9	8·7	15·8	1·5
15	11 35 18·04	11 35 51·37	1·40	1·14	3 52 21·5	3 48 59·7	8·5	15·9	1·5
17	11 36 24·29	11 36 56·78	1·36	1·15	3 45 40·7	3 42 24·5	8·2	15·9	1·5
19	11 37 28·85	11 38 0·48	1·33	1·16	3 39 11·1	3 36 0·5	8·0	16·0	1·5
21	11 38 31·68	11 39 2·43	1·29	1·16	3 32 52·9	3 29 48·2	7·8	16·1	1·5
23	11 39 32·73	11 40 2·56	1·25	1·17	3 26 46·6	3 23 48·0	7·5	16·2	1·5
25	11 40 31·92	11 41 0·81	1·21	1·17	3 20 52·5	3 18 0·3	7·2	16·3	1·5
27	11 41 29·22	11 41 57·13	1·17	1·17	3 15 11·3	3 12 25·5	7·0	16·3	1·5
29	11 42 24·55	11 42 51·46	1·13	1·18	3 9 43·0	3 7 4·0	6·7	16·4	1·5
Dec. 1	11 43 17·86	11 43 43·74	1·09	1·18	3 4 28·3	3 1 56·1	6·4	16·5	1·5
3	11 44 9·09	11 44 33·91	1·05	1·19	2 59 27·4	2 57 2·2	6·1	16·6	1·5
5	11 44 58·20	11 45 21·95	1·00	1·20	2 54 40·6	2 52 22·6	5·8	16·7	1·6
7	11 45 45·14	11 46 7·77	0·95	1·21	2 50 8·3	2 47 57·7	5·5	16·8	1·6
9	11 46 29·85	11 46 51·36	0·91	1·21	2 45 50·8	2 43 47·7	5·2	16·9	1·6
11	11 47 12·30	11 47 32·66	0·86	1·22	2 41 48·4	2 39 52·9	4·9	17·0	1·6
13	11 47 52·44	11 48 11·63	0·81	1·22	2 38 1·3	2 36 13·6	4·6	17·1	1·6
15	11 48 30·23	11 48 48·22	0·76	1·23	2 34 29·8	2 32 50·0	4·2	17·2	1·6
17	11 49 5·61	11 49 22·39	0·71	1·24	2 31 14·3	2 29 42·6	3·9	17·3	1·6
19	11 49 38·55	11 49 54·10	0·66	1·25	2 28 15·0	2 26 51·5	3·6	17·4	1·6
21	11 50 9·02	11 50 23·31	0·61	1·26	2 25 32·2	2 24 17·0	3·2	17·5	1·6
23	11 50 36·95	11 50 49·94	0·55	1·26	2 23 6·1	2 21 59·5	2·9	17·6	1·6
25	11 51 2·26	11 51 13·92	0·50	1·27	2 20 57·3	2 19 59·3	2·5	17·7	1·6
27	11 51 24·93	11 51 35·29	0·45	1·28	2 19 5·7	2 18 16·6	2·1	17·8	1·7
29	11 51 44·98	11 51 53·99	0·39	1·29	2 17 31·8	2 16 51·5	1·8	17·9	1·7
31	11 52 2·31	11 52 9·96	0·33	1·30	2 16 15·7	2 15 44·3	1·4	18·1	1·7

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	h m s	h m s	— s	s	*North.* ° ′ ″	*North.* ° ′ ″	+ ″	″	″
Jan. 1	10 46 30·06	10 46 24·80	0·21	0·63	9 41 40·7	9 42 28·3	1·9	8·6	1·0
3	10 46 19·15	10 46 13·10	0·24	0·63	9 43 18·1	9 44 10·3	2·1	8·6	1·0
5	10 46 6·66	10 45 59·83	0·28	0·63	9 45 4·7	9 46 1·4	2·3	8·7	1·0
7	10 45 52·62	10 45 45·02	0·31	0·63	9 47 0·3	9 48 1·4	2·5	8·7	1·0
9	10 45 37·04	10 45 28·68	0·34	0·63	9 49 4·7	9 50 10·1	2·7	8·7	1·0
11	10 45 19·96	10 45 10·87	0·37	0·63	9 51 17·6	9 52 27·1	2·9	8·7	1·0
13	10 45 1·41	10 44 51·60	0·40	0·64	9 53 38·6	9 54 52·1	3·0	8·8	1·0
15	10 44 41·44	10 44 30·93	0·43	0·64	9 56 7·6	9 57 25·0	3·2	8·8	1·0
17	10 44 20·09	10 44 8·91	0·46	0·64	9 58 44·2	10 0 5·2	3·3	8·8	1·0
19	10 43 57·41	10 43 45·58	0·49	0·64	10 1 28·0	10 2 52·6	3·5	8·8	1·0
21	10 43 33·44	10 43 21·00	0·51	0·65	10 4 18·8	10 5 46·6	3·6	8·9	1·0
23	10 43 8·25	10 42 55·20	0·54	0·65	10 7 16·0	10 8 47·0	3·8	9·0	1·0
25	10 42 41·87	10 42 28·26	0·56	0·66	10 10 19·4	10 11 53·2	3·9	9·0	1·0
27	10 42 14·37	10 42 0·22	0·58	0·66	10 13 28·5	10 15 5·1	4·0	9·0	1·0
29	10 41 45·81	10 41 31·14	0·61	0·66	10 16 43·0	10 18 22·2	4·1	9·0	1·0
31	10 41 16·22	10 41 1·07	0·63	0·66	10 20 2·6	10 21 44·2	4·2	9·0	1·0
Feb. 2	10 40 45·69	10 40 30·09	0·65	0·66	10 23 26·8	10 25 10·5	4·3	9·0	1·0
4	10 40 14·27	10 39 58·25	0·66	0·66	10 26 55·2	10 28 40·8	4·4	9·0	1·0
6	10 39 42·03	10 39 25·63	0·67	0·66	10 30 27·2	10 32 14·4	4·5	9·0	1·0
8	10 39 9·05	10 38 52·30	0·69	0·66	10 34 2·4	10 35 51·1	4·5	9·0	1·0
10	10 38 35·40	10 38 18·35	0·71	0·66	10 37 40·4	10 39 30·2	4·6	9·0	1·0
12	10 38 1·16	10 37 43·84	0·72	0·66	10 41 20·5	10 43 11·2	4·6	9·0	1·0
14	10 37 26·40	10 37 8·85	0·73	0·66	10 45 2·3	10 46 53·7	4·6	9·0	1·0
16	10 36 51·21	10 36 33·49	0·74	0·66	10 48 45·3	10 50 37·0	4·7	9·0	1·0
18	10 36 15·70	10 35 57·84	0·74	0·66	10 52 28·8	10 54 20·7	4·7	9·1	1·0
20	10 35 39·93	10 35 21·96	0·75	0·66	10 56 12·5	10 58 4·2	4·7	9·1	1·0
22	10 35 3·95	10 34 45·92	0·75	0·66	10 59 55·8	11 1 47·2	4·6	9·1	1·0
24	10 34 27·88	10 34 9·83	0·75	0·66	11 3 38·4	11 5 29·3	4·6	9·1	1·0
26	10 33 51·78	10 33 33·74	0·75	0·66	11 7 19·8	11 9 9·9	4·6	9·1	1·0
28	10 33 15·72	10 32 57·73	0·75	0·66	11 10 59·5	11 12 48·6	4·6	9·1	1·0
Mar. 2	10 32 39·78	10 32 21·87	0·75	0·66	11 14 37·1	11 16 24·9	4·5	9·0	1·0
4	10 32 4·03	10 31 46·26	0·74	0·66	11 18 12·0	11 19 58·4	4·4	9·0	1·0
6	10 31 28·57	10 31 10·98	0·74	0·66	11 21 43·9	11 23 28·5	4·4	9·0	1·0
8	10 30 53·49	10 30 36·11	0·73	0·66	11 25 12·2	11 26 54·8	4·3	9·0	1·0
10	10 30 18·86	10 30 1·74	0·72	0·66	11 28 36·4	11 30 16·9	4·2	9·0	1·0
12	10 29 44·76	10 29 27·93	0·70	0·66	11 31 56·2	11 33 34·3	4·1	9·0	1·0
14	10 29 11·27	10 28 54·78	0·69	0·65	11 35 11·1	11 36 46·6	4·0	8·9	1·0
16	10 28 38·47	10 28 22·34	0·68	0·65	11 38 20·7	11 39 53·4	3·9	8·9	1·0
18	10 28 6·41	10 27 50·68	0·66	0·65	11 41 24·6	11 42 54·4	3·8	8·9	1·0
20	10 27 35·17	10 27 19·88	0·64	0·65	11 44 22·6	11 45 49·2	3·6	8·9	1·0
22	10 27 4·81	10 26 49·98	0·62	0·65	11 47 14·2	11 48 37·6	3·5	8·9	1·0
24	10 26 35·40	10 26 21·07	0·60	0·65	11 49 59·3	11 51 19·3	3·4	8·9	1·0
26	10 26 6·99	10 25 53 18	0·58	0·65	11 52 37·5	11 53 53·9	3·2	8·9	1·0

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	h m s	h m s	— s	s	*North.* ° ′ ″	*North.* ° ′ ″	+ ″	″	″
Mar. 28	10 25 39·65	10 25 26·39	0·56	0·65	11 55 8·5	11 56 21·2	3·1	8·9	1·0
30	10 25 13·41	10 25 0·73	0·53	0·65	11 57 32·1	11 58 41·0	3·0	8·9	1·0
Apr. 1	10 24 48·34	10 24 36·25	0·51	0·64	11 59 48·0	12 0 53·1	2·8	8·8	1·0
3	10 24 24·47	10 24 13·00	0·48	0·64	12 1 56·2	12 2 57·2	2·6	8·8	1·0
5	10 24 1·86	10 23 51·04	0·46	0·64	12 3 56·2	12 4 53·1	2·4	8·8	1·0
7	10 23 40·56	10 23 30·41	0·43	0·64	12 5 47·9	12 6 40·3	2·2	8·8	1·0
9	10 23 20·61	10 23 11·15	0·40	0·64	12 7 31·0	12 8 19·3	2·1	8·7	1·0
11	10 23 2·05	10 22 53·31	0·37	0·64	12 9 5·3	12 9 49·2	1·9	8·7	1·0
13	10 22 44·92	10 22 36·90	0·34	0·64	12 10 30·9	12 11 10·3	1·7	8·7	1·0
15	10 22 29·25	10 22 21·97	0·31	0·63	12 11 47·4	12 12 22·3	1·5	8·6	1·0
17	10 22 15·06	10 22 8·53	0·28	0·63	12 12 55·0	12 13 25·4	1·3	8·6	1·0
19	10 22 2·38	10 21 56·61	0·25	0·63	12 13 53·4	12 14 19·2	1·1	8·6	1·0
21	10 21 51·22	10 21 46·22	0·22	0·63	12 14 42·6	12 15 3·8	0·9	8·6	1·0
23	10 21 41·61	10 21 37·39	0·18	0·63	12 15 22·6	12 15 39·1	0·7	8·5	1·0
25	10 21 33·55	10 21 30·11	0·15	0·63	12 15 53·4	12 16 5·3	0·5	8·5	1·0
27	10 21 27·06	10 21 24·41	0·12	0·63	12 16 14·9	12 16 22·2	0·4	8·5	1·0
29	10 21 22·15	10 21 20·28	0·09	0·62	12 16 27·2	12 16 29·9	0·2	8·4	1·0
May 1	10 21 18·81	10 21 17·74	0·05	0·62	12 16 30·3	12 16 28·3	0·0	8·4	1·0
3	10 21 17·06	10 21 16·79	0·02	0·62	12 16 24·0	12 16 17·4	— 0·2	8·4	1·0
5	10 21 16·91	10 21 17·44	+ 0·01	0·61	12 16 8·5	12 15 57·2	0·4	8·3	1·0
7	10 21 18·36	10 21 19·69	0·05	0·61	12 15 43·6	12 15 27·7	0·6	8·3	1·0
9	10 21 21·42	10 21 23·55	0·08	0·61	12 15 9·4	12 14 48·8	0·8	8·3	0·9
11	10 21 26·08	10 21 29·01	0·11	0·60	12 14 26·0	12 14 0·9	1·0	8·3	0·9
13	10 21 32·34	10 21 36·06	0·15	0·60	12 13 33·5	12 13 3·8	1·2	8·3	0·9
15	10 21 40·17	10 21 44·68	0·18	0·60	12 12 31·9	12 11 57·7	1·4	8·3	0·9
17	10 21 49·58	10 21 54·87	0·21	0·60	12 11 21·3	12 10 42·7	1·6	8·2	0·9
19	10 22 0·55	10 22 6·61	0·24	0·60	12 10 1·9	12 9 18·9	1·7	8·2	0·9
21	10 22 13·05	10 22 19·87	0·28	0·60	12 8 33·8	12 7 46·4	1·9	8·2	0·9
23	10 22 27·07	10 22 34·65	0·31	0·60	12 6 56·9	12 6 5·3	2·1	8·2	0·9
25	10 22 42·60	10 22 50·92	0·34	0·59	12 5 11·6	12 4 15·7	2·3	8·1	0·9
27	10 22 59·61	10 23 8·67	0·37	0·59	12 3 17·8	12 2 17·8	2·5	8·1	0·9
29	10 23 18·09	10 23 27·88	0·40	0·59	12 1 15·7	12 0 11·6	2·6	8·1	0·9
31	10 23 38·02	10 23 48·52	0·43	0·59	11 59 5·4	11 57 57·2	2·8	8·0	0·9
June 2	10 23 59·38	10 24 10·59	0·46	0·59	11 56 47·0	11 55 34·8	3·0	8·0	0·9
4	10 24 22·16	10 24 34·07	0·49	0·59	11 54 20·5	11 53 4·3	3·1	8·0	0·9
6	10 24 46·33	10 24 58·93	0·52	0·58	11 51 46·2	11 50 26·1	3·3	7·9	0·9
8	10 25 11·88	10 25 25·16	0·55	0·58	11 49 4·0	11 47 40·0	3·5	7·9	0·9
10	10 25 38·77	10 25 52·71	0·57	0·58	11 46 14·1	11 44 46·4	3·6	7·9	0·9
12	10 26 6·98	10 26 21·57	0·60	0·58	11 43 16·8	11 41 45·4	3·8	7·9	0·9
14	10 26 36·47	10 26 51·70	0·63	0·58	11 40 12·2	11 38 37·2	3·9	7·8	0·9
16	10 27 7·24	10 27 23·08	0·65	0·58	11 37 0·4	11 35 21·9	4·1	7·8	0·9
18	10 27 39·22	10 27 55·66	0·68	0·58	11 33 41·7	11 31 59·8	4·2	7·8	0·9

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	h m s	h m s	+ s	s	*North.* ° ′ ″	*North.* ° ′ ″	″ —	″	″
June 20	10 28 12·39	10 28 29·42	0·70	0·57	11 30 16·2	11 28 31·0	4·4	7·7	0·9
22	10 28 46·73	10 29 4·33	0·73	0·57	11 26 44·1	11 24 55·5	4·5	7·7	0·9
24	10 29 22·21	10 29 40·37	0·75	0·57	11 23 5·4	11 21 13·6	4·6	7·7	0·9
26	10 29 58·81	10 30 17·51	0·77	0·57	11 19 20·3	11 17 25·4	4·8	7·7	0·9
28	10 30 36·48	10 30 55·72	0·80	0·56	11 15 28·9	11 13 30·9	4·9	7·6	0·9
Nov. 11	11 27 55·02	11 28 13·58	0·78	0·55	5 31 5·9	5 29 21·3	4·4	7·6	0·9
13	11 28 31·85	11 28 49·83	0·76	0·56	5 27 38·6	5 25 57·9	4·2	7·7	0·9
15	11 29 7·53	11 29 24·94	0·73	0·56	5 24 19·2	5 22 42·5	4·1	7·7	0·9
17	11 29 42·05	11 29 58·85	0·71	0·56	5 21 7·8	5 19 35·1	3·9	7·7	0·9
19	11 30 15·35	11 30 31·55	0·68	0·56	5 18 4·5	5 16 35·9	3·7	7·7	0·9
21	11 30 47·44	11 31 3·01	0·66	0·56	5 15 9·5	5 13 45·2	3·6	7·8	0·9
23	11 31 18·26	11 31 33·19	0·63	0·56	5 12 23·0	5 11 3·0	3·4	7·8	0·9
25	11 31 47·79	11 32 2·06	0·60	0·56	5 9 45·2	5 8 29·6	3·2	7·8	0·9
27	11 32 15·99	11 32 29·58	0·57	0·56	5 7 16·3	5 6 5·3	3·0	7·8	0·9
29	11 32 42·83	11 32 55·73	0·54	0·57	5 4 56·6	5 3 50·2	2·8	7·9	0·9
Dec. 1	11 33 8·29	11 33 20·49	0·52	0·57	5 2 46·1	5 1 44·4	2·6	7·9	0·9
3	11 33 32·33	11 33 43·82	0·49	0·57	5 0 45·1	4 59 48·3	2·4	7·9	0·9
5	11 33 54·94	11 34 5·69	0·46	0·57	4 58 53·8	4 58 1·8	2·2	8·0	0·9
7	11 34 16·07	11 34 26·09	0·43	0·57	4 57 12·2	4 56 25·1	2·0	8·0	0·9
9	11 34 35·73	11 34 45·00	0·39	0·57	4 55 40·4	4 54 58·2	1·8	8·0	0·9
11	11 34 53·89	11 35 2·41	0·36	0·58	4 54 18·5	4 53 41·3	1·6	8·1	0·9
13	11 35 10·54	11 35 18·29	0·33	0·58	4 53 6·6	4 52 34·4	1·4	8·1	0·9
15	11 35 25·66	11 35 32·64	0·30	0·58	4 52 4·7	4 51 37·6	1·2	8·1	0·9
17	11 35 39·23	11 35 45·43	0·27	0·58	4 51 13·0	4 50 51·0	1·0	8·1	0·9
19	11 35 51·24	11 35 56·65	0·23	0·58	4 50 31·5	4 50 14·7	0·8	8·2	0·9
21	11 36 1·67	11 36 6·30	0·20	0·58	4 50 0·4	4 49 48·7	0·5	8·2	0·9
23	11 36 10·53	11 36 14·35	0·17	0·58	4 49 39·7	4 49 33·2	0·3	8·2	0·9
25	11 36 17·77	11 36 20·79	0·13	0·59	4 49 29·3	4 49 28·1	0·1	8·3	0·9
27	11 36 23·40	11 36 25·61	0·10	0·59	4 49 29·5	4 49 33·5	+ 0·1	8·3	0·9
29	11 36 27·41	11 36 28·80	0·07	0·59	4 49 40·0	4 49 49·2	0·3	8·3	0·9
31	11 36 29·79	11 36 30·37	0·03	0·60	4 50 1·0	4 50 15·4	0·5	8·3	1·0

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	h m s	h m s	— s	s	*North.* ° ′ ″	*North.* ° ′ ″	— ″	″	″
Jan. 1	4 28 30·98	4 28 22·48	0·36	0·15	21 45 8·1	21 44 50·2	0·8	2·0	0·5
3	4 28 14·13	4 28 5·92	0·35	0·15	21 44 32·5	21 44 15·2	0·7	2·0	0·5
5	4 27 57·86	4 27 49·95	0·33	0·15	21 43 58·2	21 43 41·5	0·7	2·0	0·5
7	4 27 42·20	4 27 34·61	0·32	0·15	21 43 25·2	21 43 9·2	0·7	2·0	0·5
9	4 27 27·19	4 27 19·93	0·31	0·15	21 42 53·5	21 42 38·2	0·7	2·0	0·5
11	4 27 12·84	4 27 5·93	0·29	0·15	21 42 23·3	21 42 8·7	0·6	2·0	0·5
13	4 26 59·19	4 26 52·63	0·28	0·15	21 41 54·5	21 41 40·6	0·6	2·0	0·5
15	4 26 46·26	4 26 40·07	0·26	0·15	21 41 27·2	21 41 14·1	0·6	2·0	0·5
17	4 26 34·07	4 26 28·26	0·25	0·15	21 41 1·4	21 40 49·1	0·5	2·0	0·5
19	4 26 22·64	4 26 17·22	0·23	0·15	21 40 37·3	21 40 25·8	0·5	2·0	0·5
21	4 26 11·99	4 26 6·96	0·21	0·15	21 40 14·8	21 40 4·2	0·5	2·0	0·5
23	4 26 2·13	4 25 57·50	0·20	0·15	21 39 54·1	21 39 44·4	0·4	2·0	0·5
25	4 25 53·08	4 25 48·86	0·18	0·15	21 39 35·2	21 39 26·4	0·4	2·0	0·5
27	4 25 44·85	4 25 41·04	0·16	0·15	21 39 18·1	21 39 10·2	0·3	2·0	0·5
29	4 25 37·45	4 25 34·07	0·15	0·15	21 39 2·8	21 38 55·9	0·3	2·0	0·5
31	4 25 30·90	4 25 27·95	0·13	0·15	21 38 49·5	21 38 43·5	0·3	2·0	0·5
Feb. 2	4 25 25·22	4 25 22·70	0·11	0·15	21 38 38·1	21 38 33·1	0·2	2·0	0·5
4	4 25 20·40	4 25 18·32	0·09	0·15	21 38 28·7	21 38 24·7	0·2	2·0	0·5
6	4 25 16·47	4 25 14·84	0·07	0·15	21 38 21·2	21 38 18·2	0·1	2·0	0·5
8	4 25 13·42	4 25 12·23	0·05	0·15	21 38 15·7	21 38 13·8	0·1	2·0	0·5
10	4 25 11·27	4 25 10·53	0·04	0·15	21 38 12·3	21 38 11·3	0·1	2·0	0·5
12	4 25 10·02	4 25 9·74	0·02	0·15	21 38 10·9	21 38 10·9	0·0	2·0	0·5
14	4 25 9·68	4 25 9·85	0·00	0·15	21 38 11·5	21 38 12·6	0·0	2·0	0·4
16	4 25 10·24	4 25 10·86	+ 0·02	0·15	21 38 14·2	21 38 16·3	+ 0·1	2·0	0·4
18	4 25 11·71	4 25 12·79	0·04	0·14	21 38 18·9	21 38 22·0	0·1	1·9	0·4
20	4 25 14·09	4 25 15·62	0·06	0·14	21 38 25·6	21 38 29·7	0·2	1·9	0·4
22	4 25 17·37	4 25 19·35	0·08	0·14	21 38 34·3	21 38 39·4	0·2	1·9	0·4
24	4 25 21·55	4 25 23·97	0·10	0·14	21 38 45·1	21 38 51·2	0·2	1·9	0·4
26	4 25 26·61	4 25 29·47	0·11	0·14	21 38 57·8	21 39 4·9	0·3	1·9	0·4
28	4 25 32·56	4 25 35·86	0·13	0·14	21 39 12·6	21 39 20·7	0·3	1·9	0·4
Mar. 2	4 25 39·38	4 25 43·12	0·15	0·14	21 39 29·3	21 39 38·4	0·4	1·9	0·4
4	4 25 47·08	4 25 51·26	0·17	0·14	21 39 48·0	21 39 58·1	0·4	1·9	0·4
6	4 25 55·65	4 26 0·26	0·19	0·14	21 40 8·7	21 40 19·7	0·5	1·9	0·4
8	4 26 5·09	4 26 10·13	0·21	0·14	21 40 31·2	21 40 43·1	0·5	1·9	0·4
10	4 26 15·38	4 26 20·85	0·22	0·14	21 40 55·5	21 41 8·4	0·5	1·9	0·4
12	4 26 26·53	4 26 32·41	0·24	0·14	21 41 21·7	21 41 35·5	0·6	1·9	0·4
14	4 26 38·50	4 26 44·80	0·26	0·14	21 41 49·7	21 42 4·4	0·6	1·9	0·4
16	4 26 51·30	4 26 57·99	0·28	0·14	21 42 19·5	21 42 35·0	0·6	1·9	0·4
18	4 27 4·89	4 27 11·99	0·29	0·14	21 42 50·9	21 43 7·2	0·7	1·9	0·4
20	4 27 19·28	4 27 26·77	0·31	0·14	21 43 23·9	21 43 41·0	0·7	1·9	0·4
22	4 27 34·45	4 27 42·32	0·32	0·14	21 43 58·6	21 44 16·6	0·7	1·9	0·4
24	4 27 50·37	4 27 58·61	0·34	0·14	21 44 34·9	21 44 53·6	0·8	1·9	0·4

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	Sid. Time of Semid' passing Merid.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Semidiameter.	Hor. Par.
	h m s	h m s	+ s	s	*North.* ° ′ ″	*North.* ° ′ ″	+ ″	″	″
Mar. 26	4 28 7·04	4 28 15·65	0·36	0·14	21 45 12·7	21 45 32·2	0·8	1·9	0·4
28	4 28 24·43	4 28 33·40	0·37	0·14	21 45 52·0	21 46 12·2	0·8	1·9	0·4
30	4 28 42·55	4 28 51·89	0·39	0·14	21 46 32·7	21 46 53·6	0·8	1·9	0·4
			—				—		
Oct. 20	4 59 23·15	4 59 16·88	0·26	0·15	22 44 3·5	22 43 55·0	0·3	2·0	0·5
22	4 59 10·43	4 59 3·80	0·27	0·15	22 43 46·2	22 43 37·1	0·4	2·0	0·5
24	4 58 56·99	4 58 50·01	0·29	0·15	22 43 27·8	22 43 18·2	0·4	2·0	0·5
26	4 58 42·85	4 58 35·52	0·30	0·15	22 43 8·3	22 42 58·1	0·4	2·0	0·5
28	4 58 28·02	4 58 20·36	0·32	0·15	22 42 47·7	22 42 37·0	0·4	2·0	0·5
30	4 58 12·54	4 58 4·56	0·33	0·15	22 42 26·1	22 42 14·9	0·5	2·0	0·5
Nov. 1	4 57 56·42	4 57 48·13	0·34	0·15	22 42 3·5	22 41 51·8	0·5	2·0	0·5
3	4 57 39·70	4 57 31·12	0·35	0·15	22 41 39·8	22 41 27·6	0·5	2·0	0·5
5	4 57 22·40	4 57 13·55	0·37	0·15	22 41 15·1	22 41 2·4	0·5	2·0	0·5
7	4 57 4·56	4 56 55·45	0·38	0·15	22 40 49·5	22 40 36·4	0·5	2·0	0·5
9	4 56 46·21	4 56 36·85	0·39	0·15	22 40 23·1	22 40 9·6	0·6	2·0	0·5
11	4 56 27·37	4 56 17·78	0·39	0·15	22 39 55·8	22 39 41·9	0·6	2·0	0·5
13	4 56 8·09	4 55 58·30	0·40	0·15	22 39 27·7	22 39 13·4	0·6	2·0	0·5
15	4 55 48·40	4 55 38·41	0·41	0·15	22 38 58·8	22 38 44·1	0·6	2·0	0·5
17	4 55 28·32	4 55 18·15	0·42	0·15	22 38 29·2	22 38 14·1	0·6	2·0	0·5
19	4 55 7·90	4 54 57·57	0·43	0·15	22 37 58·8	22 37 43·4	0·6	2·0	0·5
21	4 54 47·16	4 54 36·68	0·44	0·15	22 37 27·8	22 37 12·0	0·7	2·0	0·5
23	4 54 26·14	4 54 15·54	0·44	0·15	22 36 56·1	22 36 40·1	0·7	2·0	0·5
25	4 54 4·88	4 53 54·17	0·45	0·15	22 36 23·9	22 36 7·6	0·7	2·0	0·5
27	4 53 43·41	4 53 32·61	0·45	0·15	22 35 51·1	22 35 34·6	0·7	2·0	0·5
29	4 53 21·78	4 53 10·91	0·45	0·15	22 35 17·9	22 35 1·2	0·7	2·0	0·5
Dec. 1	4 53 0·02	4 52 49·10	0·45	0·15	22 34 44·4	22 34 27·5	0·7	2·0	0·5
3	4 52 38·17	4 52 27·22	0·46	0·15	22 34 10·5	22 33 53·5	0·7	2·0	0·5
5	4 52 16·27	4 52 5·32	0·46	0·15	22 33 36·4	22 33 19·2	0·7	2·0	0·5
7	4 51 54·37	4 51 43·43	0·46	0·15	22 33 2·0	22 32 44·8	0·7	2·0	0·5
9	4 51 32·50	4 51 21·59	0·46	0·15	22 32 27·6	22 32 10·3	0·7	2·0	0·5
11	4 51 10·71	4 50 59·86	0·45	0·15	22 31 53·1	22 31 35·8	0·7	2·0	0·5
13	4 50 49·04	4 50 38·26	0·45	0·15	22 31 18·6	22 31 1·3	0·7	2·0	0·5
15	4 50 27·52	4 50 16·83	0·45	0·15	22 30 44·1	22 30 26·9	0·7	2·0	0·5
17	4 50 6·19	4 49 55·61	0·44	0·15	22 30 9·8	22 29 52·6	0·7	2·0	0·5
19	4 49 45·08	4 49 34·62	0·44	0·15	22 29 35·6	22 29 18·6	0·7	2·0	0·5
21	4 49 24·23	4 49 13·91	0·43	0·15	22 29 1·6	22 28 44·8	0·7	2·0	0·5
23	4 49 3·67	4 48 53·51	0·43	0·15	22 28 28·0	22 28 11·3	0·7	2·0	0·5
25	4 48 43·44	4 48 33·46	0·42	0·15	22 27 54·8	22 27 38·4	0·7	2·0	0·5
27	4 48 23·58	4 48 13·80	0·41	0·15	22 27 22·1	22 27 5·9	0·7	2·0	0·5
29	4 48 4·13	4 47 54·57	0·40	0·15	22 26 49·9	22 26 34·1	0·7	2·0	0·5
31	4 47 45·12	4 47 35·79	0·39	0·15	22 26 18·4	22 26 2·9	0·7	2·0	0·5

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Hor. Par.
	h m s	h m s	+ s	South. ° ′ ″	South. ° ′ ″	+ ″	″
Jan. 1	23 50 17·42	23 50 20·57	0·13	2 29 38·7	2 29 15·8	0·94	0·3
3	23 50 23·83	23 50 27·21	0·14	2 28 52·2	2 28 27·9	1·00	0·3
5	23 50 30·72	23 50 34·34	0·15	2 28 2·8	2 27 36·9	1·06	0·3
7	23 50 38·07	23 50 41·93	0·16	2 27 10·3	2 26 43·0	1·12	0·3
9	23 50 45·89	23 50 49·98	0·17	2 26 14·9	2 25 46·1	1·18	0·3
11	23 50 54·18	23 50 58·49	0·18	2 25 16·6	2 24 46·4	1·24	0·3
13	23 51 2·91	23 51 7·44	0·19	2 24 15·5	2 23 43·9	1·30	0·3
15	23 51 12·07	23 51 16·81	0·20	2 23 11·6	2 22 38·7	1·36	0·3
17	23 51 21·66	23 51 26·61	0·20	2 22 5·0	2 21 30·7	1·42	0·3
19	23 51 31·67		0·21	2 20 55·8		1·47	0·3
			—	South.	South.	—	
Aug. 7	0 7 7·29	0 7 3·54	0·15	0 44 43·7	0 45 10·8	1·12	0·3
9	0 6 59·70	0 6 55·76	0·16	0 45 38·5	0 46 6·7	1·16	0·3
11	0 6 51·74	0 6 47·64	0·17	0 46 35·5	0 47 4·8	1·21	0·3
13	0 6 43·44	0 6 39·15	0·18	0 47 34·7	0 48 5·0	1·25	0·3
15	0 6 34·79	0 6 30·34	0·18	0 48 35·8	0 49 7·1	1·30	0·3
17	0 6 25·83	0 6 21·23	0·19	0 49 38·9	0 50 11·2	1·34	0·3
19	0 6 16·56	0 6 11·82	0·20	0 50 43·9	0 51 17·0	1·38	0·3
21	0 6 7·00	0 6 2·11	0·20	0 51 50·6	0 52 24·6	1·41	0·3
23	0 5 57·15	0 5 52·12	0·21	0 52 59·0	0 53 33·8	1·44	0·3
25	0 5 47·03	0 5 41·87	0·21	0 54 9·0	0 54 44·5	1·47	0·3
27	0 5 36·65	0 5 31·35	0·22	0 55 20·4	0 55 56·6	1·50	0·3
29	0 5 26·04	0 5 20·64	0·22	0 56 33·2	0 57 10·1	1·53	0·3
31	0 5 15·19	0 5 9·69	0·22	0 57 47·3	0 58 24·8	1·56	0·3
Sept. 2	0 5 4·13	0 4 58·52	0·23	0 59 2·5	0 59 40·5	1·58	0·3
4	0 4 52·87	0 4 47·19	0·23	1 0 18·7	1 0 57·2	1·60	0·3
6	0 4 41·46	0 4 35·68	0·23	1 1 35·9	1 2 14·8	1·62	0·3
8	0 4 29·88	0 4 24·04	0·24	1 2 53·9	1 3 33·1	1·63	0·3
10	0 4 18·16	0 4 12·26	0·24	1 4 12·4	1 4 51·9	1·64	0·3
12	0 4 6·33	0 4 0·37	0·24	1 5 31·6	1 6 11·4	1·65	0·3
14	0 3 54·39	0 3 48·39	0·25	1 6 51·2	1 7 31·1	1·66	0·3
16	0 3 42·37	0 3 36·34	0·25	1 8 11·1	1 8 51·2	1·67	0·3
18	0 3 30·30	0 3 24·24	0·25	1 9 31·2	1 10 11·3	1·67	0·3
20	0 3 18·17	0 3 12·10	0·25	1 10 51·4	1 11 31·5	1·67	0·3
22	0 3 6·02	0 2 59·94	0·25	1 12 11·6	1 12 51·6	1·67	0·3
24	0 2 53·85	0 2 47·76	0·25	1 13 31·6	1 14 11·5	1·67	0·3
26	0 2 41·68	0 2 35·61	0·25	1 14 51·3	1 15 31·1	1·66	0·3
28	0 2 29·55	0 2 23·50	0·25	1 16 10·7	1 16 50·2	1·65	0·3
30	0 2 17·47	0 2 11·45	0·25	1 17 29·5	1 18 8·7	1·64	0·3
Oct. 2	0 2 5·44	0 1 59·46	0·25	1 18 47·7	1 19 26·5	1·62	0·3
4	0 1 53·50	0 1 47·56	0·25	1 20 5·1	1 20 43·5	1·60	0·3
6	0 1 41·66	0 1 35·79	0·25	1 21 21·6	1 21 59·5	1·58	0·3
8	0 1 29·95	0 1 24·15	0·24	1 22 37·1	1 23 14·4	1·56	0·3

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Hor. Par.
	h m s	h m s	— s	*South.* ° ′ ″	*South.* ° ′ ″	— ″	″
Oct. 10	0 1 18·39	0 1 12·67	0·24	1 23 51·4	1 24 28·0	1·53	0·3
12	0 1 6·99	0 1 1·36	0·23	1 25 4·3	1 25 40·2	1·51	0·3
14	0 0 55·78	0 0 50·24	0·23	1 26 15·8	1 26 51·1	1·48	0·3
16	0 0 44·75	0 0 39·32	0·23	1 27 26·0	1 28 0·5	1·45	0·3
18	0 0 33·95	0 0 28·63	0·22	1 28 34·6	1 29 8·2	1·41	0·3
20	0 0 23·36	0 0 18·16	0·22	1 29 41·4	1 30 14·1	1·37	0·3
22	0 0 13·03	0 0 7·96	0·21	1 30 46·4	1 31 18·1	1·33	0·3
24	0 0 2·96	23 59 58·03	0·21	1 31 49·4	1 32 20·2	1·29	0·3
26	23 59 53·18	23 59 48·39	0·20	1 32 50·4	1 33 20·1	1·25	0·3
28	23 59 43·68	23 59 39·05	0·19	1 33 49·3	1 34 17·9	1·21	0·3
30	23 59 34·50	23 59 30·04	0·19	1 34 46·0	1 35 13·5	1·16	0·3
Nov. 1	23 59 25·65	23 59 21·35	0·18	1 35 40·4	1 36 6·7	1·11	0·3
3	23 59 17·15	23 59 13·03	0·17	1 36 32·3	1 36 57·3	1·05	0·3
5	23 59 8·99	23 59 5·06	0·17	1 37 21·8	1 37 45·6	1·00	0·3
7	23 59 1·23	23 58 57·48	0·16	1 38 8·7	1 38 31·1	0·95	0·3
9	23 58 53·83	23 58 50·29	0·15	1 38 52·9	1 39 14·0	0·90	0·3
11	23 58 46·85	23 58 43·50	0·14	1 39 34·4	1 39 54·1	0·84	0·3
13	23 58 40·26	23 58 37·13	0·14	1 40 13·1	1 40 31·4	0·78	0·3
15	23 58 34·11	23 58 31·18	0·13	1 40 49·0	1 41 5·8	0·72	0·3
17	23 58 28·37	23 58 25·68	0·12	1 41 21·9	1 41 37·2	0·66	0·3
19	23 58 23·10	23 58 20·61	0·11	1 41 51·8	1 42 5·6	0·59	0·3
21	23 58 18·24	23 58 15·99	0·10	1 42 18·7	1 42 31·0	0·53	0·3
23	23 58 13·86	23 58 11·84	0·09	1 42 42·6	1 42 53·4	0·47	0·3
25	23 58 9·93	23 58 8·15	0·08	1 43 3·3	1 43 12·5	0·40	0·3
27	23 58 6·49	23 58 4·95	0·07	1 43 20·9	1 43 28·5	0·33	0·3
29	23 58 3·51	23 58 2·21	0·06	1 43 35·2	1 43 41·2	0·26	0·3
Dec. 1	23 58 1·03	23 57 59·97	0·05	1 43 46·4	1 43 50·7	0·19	0·3
3	23 57 59·03	23 57 58·23	0·04	1 43 54·1	1 43 56·7	0·12	0·3
5	23 57 57·55	23 57 56·99	0·03	1 43 58·6	1 43 59·6	0·05	0·3
7	23 57 56·55	23 57 56·25	0·02	1 43 59·7	1 43 59·0	+ 0·01	0·3
9	23 57 56·07	23 57 56·02	0·00 +	1 43 57·6	1 43 55·3	0·08	0·3
11	23 57 56·10	23 57 56·31	0·01	1 43 52·1	1 43 48·1	0·15	0·3
13	23 57 56·64	23 57 57·10	0·02	1 43 43·3	1 43 37·7	0·22	0·3
15	23 57 57·67	23 57 58·38	0·03	1 43 31·2	1 43 23·9	0·29	0·3
17	23 57 59·21	23 58 0·18	0·04	1 43 15·8	1 43 6·9	0·36	0·3
19	23 58 1·27	23 58 2·50	0·05	1 42 57·1	1 42 46·5	0·43	0·3
21	23 58 3·85	23 58 5·32	0·06	1 42 35·0	1 42 22·8	0·50	0·3
23	23 58 6·91	23 58 8·64	0·07	1 42 9·8	1 41 55·9	0·56	0·3
25	23 58 10·49	23 58 12·46	0·08	1 41 41·2	1 41 25·7	0·62	0·3
27	23 58 14·56	23 58 16·79	0·09	1 41 9·5	1 40 52·4	0·69	0·3
29	23 58 19·14	23 58 21·61	0·10	1 40 34·5	1 40 15·8	0·76	0·3
31	23 58 24·21	23 58 26·93	0·11	1 39 56·3	1 39 36·0	0·83	0·3

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MEAN PLACES FOR JANUARY 0d—·130. (See page 327.)

Star's Name.	Mag.	Right Ascension.	Annual Var.	Declination.	Annual Var.
		h m s	s	° ′ ″	″
α Andromedæ - -	2	0 1 12·468	+ 3·0847	N.28 19 22·52	+19·901
γ Pegasi (*Algenib*)	3.2	0 6 4·822	3·0803	N.14 24 38·14	20·029
β Hydri - - - -	3	0 18 23·368	3·2881	S. 78 2 16·65	20·251
12 Ceti - - - - -	6	0 22 56·735	3·0592	S. 4 43 32·97	19·945
α Cassiopeæ - - -	var.	0 32 38·457	+ 3·3574	N.55 46 28·03	+19·813
β Ceti - - - - -	2	0 36 36·541	3·0126	S. 18 45 1·27	19·820
ε Piscium - - - -	4	0 55 43·918	3·1099	N. 7 8 27·33	19·465
α Urs. Min. (*Polaris*)	2	1 8 21·452	18·9684	N.88 34 6·53	19·169
θ Ceti - - - - -	3	1 17 4·500	+ 2·9962	S. 8 54 6·59	+18·712
η Piscium - - - -	4.3	1 24 2·924	3·1971	N.14 37 40·81	18·719
α Eridani (*Achernar*)	1	1 32 31·906	2·2360	S.57 56 37·34	18·431
ν Piscium - - - -	5.4	1 34 11·980	3·1131	N. 4 46 58·47	18·341
β Arietis - - - -	3.2	1 46 58·001	+ 3·2946	N.20 7 37·11	+17·798
α Arietis - - - -	2	1 59 20·625	3·3646	N.22 48 11·73	17·247
67 Ceti - - - - -	6	2 10 3·048	2·9859	S. 7 3 52·37	16·778
ξ² Ceti - - - - -	4	2 20 46·308	3·1791	N. 7 50 5·45	16·371
γ Ceti - - - - -	3.4	2 36 6·003	+ 3·1005	N. 2 38 51·42	+15·398
α Ceti - - - - -	2.3	2 55 0·898	3·1264	N. 3 32 30·75	14·374
δ Arietis - - - -	4.5	3 3 41·142	3·4167	N.19 11 54·24	13·951
α Persei - - - -	2	3 14 24·965	4·2437	N.49 21 46·16	13·210
η Tauri - - - -	3	3 39 13·580	+ 3·5507	N.23 40 19·93	+11·497
γ² Eridani - - - -	3	3 51 32·646	2·7942	S.13 54 23·65	10·543
o² Eridani - - - -	4.5	4 5 4·910	2·9209	S. 7 12 9·29	9·715
ε Tauri - - - -	4.3	4 20 30·194	3·4913	N.18 52 7·32	8·401
α Tauri (*Aldebaran*)	1	4 27 56·869	+ 3·4343	N.16 13 35·34	+ 7·663
ι Aurigæ - - - -	3	4 47 56·766	3·8933	N.32 56 31·40	6·182
ε Leporis - - - -	4.3	4 59 34·589	2·5355	S.22 33 37·68	5·155
α Aurigæ (*Capella*)	1	5 6 25·550	4·4203	N.45 51 6·92	4·212
β Orionis (*Rigel*) -	1	5 7 51·494	+ 2·8795	S. 8 21 55·49	+ 4·501
β Tauri - - - -	2	5 17 30·404	3·7866	N.28 29 9·15	3·496
δ Orionis - - - -	2	5 24 54·400	3·0637	S. 0 24 19·64	3·018
α Leporis - - - -	3	5 26 36·043	2·6457	S.17 55 28·45	2·914
ε Orionis - - - -	2	5 29 9·643	+ 3·0412	S. 1 17 38·54	+ 2·674
α Columbæ - - - -	2	5 34 37·122	2·1775	S. 34 8 59·95	2·215
α Orionis - - - -	var.	5 47 38·812	3·2460	N. 7 22 39·13	1·076
ν Orionis - - - -	5.4	5 59 38·153	3·4259	N.14 46 53·11	+ 0·011
μ Geminorum - -	3	6 14 33·052	+ 3·6322	N.22 34 51·57	− 1·402
α Argûs (*Canopus*)	1	6 20 52·111	1·3302	S. 52 37 15·57	1·824
γ Geminorum - -	2.3	6 29 40·905	3·4663	N.16 30 51·41	2·587
51 (Hev.) Cephei - -	5	6 34 7·678	+30·4233	N.87 14 50·50	− 3·076

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MEAN PLACES FOR JANUARY 0d—·130. (See page 327.)

Star's Name.	Mag.	Right Ascension.	Annual Var.	Declination.	Annual Var.
		h m s	s	° ′ ″	″
α Canis Maj. (*Sirius*)	1	6 39 1·477	+ 2·6451	S. 16 31 42·78	— 4·624
ε Canis Majoris	2.1	6 53 9·806	2·3578	S. 28 47 8·36	4·623
γ Canis Majoris	4.5	6 57 28·217	2·7158	S. 15 25 50·08	4·979
δ Geminorum	3.4	7 11 49·152	3·5919	N. 22 14 4·63	6·201
α² Geminor. (*Castor*)	2.1	7 25 43·571	+ 3·8430	N. 32 11 21·80	— 7·405
α Can. Min. (*Procyon*)	1	7 32 1·385	3·1451	N. 5 34 42·43	8·871
β Geminor. (*Pollux*)	1.2	7 36 48·328	3·6825	N. 28 21 30·27	8·282
6 Cancri	5	7 54 58·642	3·6955	N. 28 10 50·90	9·712
15 Argûs	3	8 1 37·486	+ 2·5548	S. 23 54 21·10	—10·085
η Cancri	6	8 24 39·929	3·4799	N. 20 54 37·64	11·893
ε Hydræ	3.4	8 39 24·775	3·1843	N. 6 55 34·82	12·892
ι Ursæ Majoris	3	8 49 40·347	4·1442	N. 48 35 4·00	13·804
83 Cancri	6	9 11 13·030	+ 3·3569	N. 18 17 32·41	—15·022
ι Argûs	2	9 13 22·132	1·6018	S. 58 41 32·75	14·914
α Hydræ	2	9 20 45·351	2·9487	S. 8 3 29·07	15·375
θ Ursæ Majoris	3	9 23 32·330	4·0569	N. 52 18 30·08	16·122
ε Leonis	3	9 37 57·303	+ 3·4204	N. 24 24 44·35	—16·344
π Leonis	5	9 52 51·925	3·1772	N. 8 42 33·85	17·077
α Leonis (*Regulus*)	1.2	10 0 57·952	3·2031	N. 12 38 42·01	17·403
γ² Leonis	2	10 12 18·268	3·3177	N. 20 32 35·28	18·029
ρ Leonis	4	10 25 29·391	+ 3·1668	N. 10 1 14·33	—18·404
η Argûs	2	10 39 40·586	2·3074	S. 58 57 14·00	18·745
l Leonis	5	10 41 56·872	3·1583	N. 11 16 47·28	18·920
α Ursæ Majoris	2	10 55 7·247	3·7726	N. 62 30 1·26	19·347
χ Leonis	5	10 57 50·712	+ 3·0987	N. 8 5 11·62	—19·401
δ Leonis	2.3	11 6 42·686	3·2035	N. 21 17 4·45	19·661
δ Hydræ et Crateris	3.4	11 12 23·551	2·9944	S. 14 1 37·08	19·447
υ Leonis	5.4	11 29 49·938	3·0690	S. 0 3 23·44	19·854
β Leonis	2	11 41 57·995	+ 3·0655	N. 15 20 56·26	—20·096
γ Ursæ Majoris	2.3	11 46 30·190	3·1933	N. 54 28 3·04	20·025
ε Corvi	3	12 2 58·826	3·0744	S. 21 50 47·23	20·047
β Chamæleontis	5	12 10 15·964	3·3239	S. 78 32 25·59	20·044
η Virginis	3.4	12 12 47·661	+ 3·0647	N. 0 6 22·15	—20·057
α¹ Crucis	1	12 18 53·346	3·2590	S. 62 19 38·76	19·936
β Corvi	2.3	12 27 5·329	3·1304	S. 22 37 39·97	19·982
γ² Virginis	3.2	12 34 37·079	3·0371	S. 0 41 12·99	19·873
12 Canum Venaticor.	3	12 49 31·136	+ 2·8174	N. 39 4 11·36	—19·532
θ Virginis	4.5	13 2 45·300	3·0982	S. 4 47 45·50	19·347
α Virginis (*Spica*)	1	13 17 52·386	3·1497	S. 10 26 4·99	18·947
ζ Virginis	3.4	13 27 36·764	+ 3·0517	N. 0 6 58·47	18·543

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MEAN PLACES FOR JANUARY 0d—·130. (See page 327.)

Star's Name.	Mag.	Right Ascension.	Annual Var.	Declination.	Annual Var.
		h m s	s	° ′ ″	″
η Ursæ Majoris	2	13 42 3·570	+ 2·3737	N.50 0 29·28	−18·122
η Bootis	3	13 48 3·948	2·8581	N.19 5 45·04	18·221
β Centauri	1	13 54 2·838	4·1543	S.59 42 0·49	17·691
γ Virginis	4	13 54 34·419	3·0461	N. 2 13 7·42	17·668
α Bootis (*Arcturus*)	1	14 9 19·293	+ 2·7337	N.19 54 27·65	−18·924
ρ Bootis	4.3	14 25 50·367	2·5870	N.30 58 59·90	15·992
α² Centauri	1	14 30 12·034	4·0288	S.60 15 23·76	15·058
ε Bootis	2.3	14 38 54·929	2·6194	N.27 39 43·04	15·418
α² Libræ	2.3	14 43 11·589	+ 3·3044	S.15 27 42·56	−15·240
β Ursæ Minoris	2	14 51 9·144	− 0·2582	N.74 43 24·04	14·754
ψ Bootis	4.5	14 58 29·444	+ 2·5704	N.27 29 30·06	14·270
β Libræ	2	15 9 31·793	+ 3·2178	S. 8 52 2·95	13·593
α Coronæ Borealis	2	15 28 48·151	+ 2·5375	N.27 11 4·79	−12·363
α Serpentis	2.3	15 37 25·319	+ 2·9487	N. 6 51 55·80	11·630
ζ Ursæ Minoris	4.5	15 49 6·261	− 2·3172	N.78 13 13·17	10·837
β² Scorpii	2	15 57 21·511	+ 3·4763	S.19 25 18·22	10·245
δ Ophiuchi	3	16 7 3·764	+ 3·1353	S. 3 20 0·72	− 9·608
α Scorpii (*Antares*)	1.2	16 20 53·340	3·6653	S.26 7 11·92	8·432
η Draconis	3.2	16 22 7·444	0·8218	N.61 49 46·94	8·226
α Trianguli Australis	2	16 33 59·060	6·2736	S.68 45 57·54	7·428
ζ Herculis	3.2	16 36 2·800	+ 2·2622	N.31 51 24·60	− 6·737
κ Ophiuchi	3.4	16 51 5·434	+ 2·8336	N. 9 35 38·19	5·915
ε Ursæ Minoris	4.5	17 0 20·900	− 6·4173	N.82 15 35·77	5·166
α Herculis	var.	17 8 18·548	+ 2·7318	N.14 33 5·87	4·439
θ Ophiuchi	3.4	17 13 28·472	+ 3·6758	S.24 51 23·31	− 4·026
β Draconis	3.2	17 27 17·544	1·3503	N.52 24 20·23	2·848
α Ophiuchi	2	17 28 28·923	2·7805	N.12 39 50·89	2·957
μ Herculis	3.4	17 41 1·138	2·3422	N.27 48 15·39	2·393
σ Octantis	6	17 49 56·946	109·4071	S.89 16 41·19	− 0·763
γ Draconis	2.3	17 53 22·747	1·3922	N.51 30 23·59	− 0·618
μ² Sagittarii	4	18 5 26·967	+ 3·5844	S.21 5 29·20	+ 0·472
δ Ursæ Minoris	4.5	18 17 11·065	−19·3577	N.86 36 8·45	+ 1·514
α Lyræ (*Vega*)	1	18 32 13·882	+ 2·0303	N.38 39 23·25	+ 3·100
β Lyræ	var.	18 44 56·805	2·2119	N.33 12 12·07	3·880
ζ Aquilæ	3	18 59 1·142	2·7520	N.13 39 35·02	5·036
ω Aquilæ	6.5	19 11 17·467	2·8140	N.11 20 50·58	6·158
δ Aquilæ	3.4	19 18 29·302	+ 3·0241	N. 2 50 26·29	+ 6·836
λ² Sagittarii	5.4	19 28 14·560	3·6566	S.25 11 11·02	7·553
γ Aquilæ	3	19 39 38·993	2·8516	N.10 16 38·01	8·453
α Aquilæ (*Altair*)	1.2	19 43 59·998	+ 2·9274	N. 8 30 14·34	+ 9·175

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MEAN PLACES FOR JANUARY 0d—·130. (See page 327.)

Star's Name.	Mag.	Right Ascension.	Annual Var.	Declination.	Annual Var.
		h m s	s	° ′ ″	″
β Aquilæ	4	19 48 29·031	+ 2·9465	N. 6 3 44·11	+ 8·668
λ Ursæ Minoris	5	20 2 58·163	−56·6198	N.88 53 34·95	10·224
α² Capricorni	3.4	20 10 20·299	+ 3·3332	S. 12 58 22·46	10·803
α Pavonis	2	20 14 38·001	+ 4·8007	S. 57 10 33·60	11·088
ρ Capricorni	5	20 20 55·548	+ 3·4266	S. 18 16 12·64	+11·565
α Cygni	2.1	20 36 41·574	2·0428	N.44 47 6·87	12·670
32 Vulpeculæ	5.6	20 48 38·170	2·5536	N.27 31 51·07	13·465
61 Cygni	5.6	21 0 39·888	2·6734	N.38 4 4·04	17·469
ζ Cygni	3	21 7 1·223	+ 2·5477	N.29 39 30·25	+14·541
α Cephei	3.2	21 15 15·574	1·4382	N.61 59 50·43	15·101
β Aquarii	3	21 24 14·278	3·1631	S. 6 10 50·43	15·606
β Cephei	3	21 26 51·172	0·8028	N.69 57 2·91	15·701
ε Pegasi	2.3	21 37 21·515	+ 2·9480	N. 9 14 21·91	+16·298
16 Pegasi	5.6	21 46 44·337	2·7257	N.25 16 20·75	16·753
α Aquarii	3	21 58 38·532	3·0827	S. 0 59 37·56	17·297
α Gruis	2	21 59 27·395	3·8185	S.47 37 54·57	17·165
θ Aquarii	4.5	22 9 29·766	+ 3·1700	S. 8 28 26·10	+17·737
η Aquarii	4.3	22 28 12·724	3·0822	S. 0 49 57·96	18·413
ζ Pegasi	3.4	22 34 31·713	2·9870	N.10 6 24·68	18·680
α Pis.Aus. (*Fomalhaut*)	1.2	22 49 57·674	3·3307	S. 30 21 28·99	18·953
α Pegasi (*Markab*)	2	22 57 50·290	+ 2·9827	N.14 27 29·29	+19·301
γ Piscium	4	23 9 57·569	3·1061	N. 2 31 24·25	19·565
κ Piscium	5.4	23 19 48·413	3·0746	N. 0 29 42·53	19·629
ι Piscium	4.5	23 32 48·106	3·0841	N. 4 52 23·30	19·464
γ Cephei	3.4	23 33 40·276	+ 2·3954	N.76 51 24·17	+20·075
δ Sculptoris	4.5	23 41 40·812	3·1334	S.28 53 54·66	19·922
ω Piscium	4	23 52 10·501	+ 3·0772	N. 6 5 37·62	+19·915

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FORMULÆ OF REDUCTION.

ACCORDING TO THE LATE PROFESSOR BESSEL.

1.—*Adopting the Notation of the British Association Catalogue and the Coefficients of Professor Peters* (*Numerus Constans Nutationis, p.* 75).

$A = -20''\cdot4451 \cos\omega \cos\odot$

$B = -20''\cdot4451 \sin\odot$

$C = t - 0\cdot02519 \sin 2\odot - 0\cdot34240 \sin\Omega + 0\cdot00410 \sin 2\Omega - 0\cdot00405 \sin 2\leftmoon$

$D = -0''\cdot5507 \cos 2\odot - 9''\cdot2236 \cos\Omega + 0''\cdot0895 \cos 2\Omega - 0''\cdot0885 \cos 2\leftmoon$

$a = \cos\alpha \sec\delta$

$b = \sin\alpha \sec\delta$

$c = 46''\cdot0798 + 20''\cdot0554 \sin\alpha \tan\delta$

$d = \cos\alpha \tan\delta$

$a' = \tan\omega \cos\delta - \sin\alpha \sin\delta$

$b' = \cos\alpha \sin\delta$

$c' = 20''\cdot0554 \cos\alpha$

$d' = -\sin\alpha$

Δc = the annual proper motion in Right Ascension, in *arc*.
$\Delta c'$ = the annual proper motion in Declination.

Where t denotes the time reckoned from the moment when the Sun's mean longitude was 280° (Jan. $0^d\cdot130$) and expressed in fractional parts of a tropical year, $\odot$ the Sun's and $\leftmoon$ the Moon's true longitude, Ω the mean longitude of the Moon's node, and ω the obliquity of the Ecliptic, each for the time t: α the mean Right Ascension, *in arc*, and δ the mean Declination for the beginning of the year. Then, for the time represented by t,

Apparent R.A., *in arc*, $= \alpha + A\,a + B\,b + C\,c + D\,d + t\,\Delta c$.
Apparent Dec. - - - $= \delta + A\,a' + B\,b' + C\,c' + D\,d' + t\,\Delta c'$.

2.—*Using the same Notation and Coefficients, and assuming*

$46''\cdot0798\ C = f$ $\qquad B = h \cos H$
$20''\cdot0554\ C = g \cos G$ $\qquad A = h \sin H$
$D = g \sin G$ $\qquad A \tan\omega = i$

Apparent R.A., *in arc*, $= \alpha + f + t\,\Delta c + g \sin(G+\alpha) \tan\delta + h \sin(H+\alpha) \sec\delta$

Apparent Dec. - - - $= \delta + i \cos\delta + t\,\Delta c' + g \cos(G+\alpha) + h \cos(H+\alpha) \sin\delta$

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CONSTANTS FOR FACILITATING THE REDUCTION OF STARS.

Month and Day.	At Greenwich Mean Midnight.					
	f	*g*	*G*	*h*	*H*	*i*
	″	″	° ′	″	° ′	″
Jan. 1	+15·01	+ 7·28	333 49	+20·38	349 17	− 1·64
6	15·85	7·62	334 58	20·31	344 34	2·35
11	16·68	7·95	335 55	20·22	339 49	3·03
16	17·47	8·28	336 41	20·11	335 0	3·69
21	+18·24	+ 8·61	337 17	+19·98	330 9	− 4·32
26	18·97	8·92	337 46	19·84	325 14	4·92
31	19·67	9·22	338 9	19·70	320 16	5·47
Feb. 5	20·33	9·51	338 28	19·55	315 13	5·98
10	+20·95	+ 9·78	338 45	+19·40	310 6	− 6·44
15	21·54	10·04	339 0	19·25	304 55	6·86
20	22·10	10·29	339 15	19·13	299 41	7·21
25	22·63	10·51	339 31	19·01	294 23	7·52
Mar. 2	+23·13	+10·72	339 49	+18·92	289 2	− 7·76
7	23·61	10·93	340 9	18·84	283 39	7·95
12	24·09	11·12	340 33	18·79	278 14	8·07
17	24·54	11·30	340 59	18·76	272 50	8·13
22	+24·99	+11·47	341 29	+18·76	267 25	− 8·13
27	25·45	11·64	342 4	18·79	262 2	8·07
April 1	25·92	11·81	342 42	18·84	256 41	7·95
6	26·40	11·99	343 23	18·91	251 24	7·77
11	+26·90	+12·17	344 8	+19·00	246 9	− 7·54
16	27·43	12·36	344 55	19·11	241 0	7·26
21	27·98	12·57	345 44	19·24	235 55	6·92
26	28·56	12·78	346 34	19·38	230 55	6·52
May 1	+29·18	+13·01	347 24	+19·52	225 59	− 6·09
6	29·82	13·26	348 14	19·66	221 9	5·61
11	30·50	13·52	349 2	19·80	216 24	5·10
16	31·21	13·80	349 48	19·94	211 43	4·55
21	+31·95	+14·10	350 31	+20·06	207 6	− 3·97
26	32·72	14·41	351 11	20·17	202 33	3·36
31	33·51	14·74	351 48	20·26	198 4	2·73
June 5	34·32	15·07	352 20	20·34	193 36	2·08
10	+35·15	+15·42	352 48	+20·40	189 11	− 1·41
15	35·99	15·77	353 12	20·43	184 48	0·73
20	36·83	16·13	353 32	20·44	180 25	− 0·06
25	37·67	16·49	353 48	20·44	176 3	+ 0·61
30	38·51	16·85	354 0	20·41	171 40	1·28
July 5	+39·34	+17·21	354 9	+20·35	167 16	+ 1·95

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CONSTANTS FOR FACILITATING THE REDUCTION OF STARS.

Month and Day.	At Greenwich Mean Midnight.					
	f	*g*	*G*	*h*	*H*	*i*
	″	″	° ′	″	° ′	″
July 5	+39·34	+17·21	354 9	+20·35	167 16	+ 1·95
10	40·15	17·56	354 14	20·28	162 50	2·60
15	40·94	17·91	354 17	20·19	158 22	3·23
20	41·71	18·24	354 18	20·08	153 51	3·84
25	+42·45	+18·57	354 16	+19·96	149 17	+ 4·43
30	43·17	18·88	354 14	19·83	144 39	4·98
Aug. 4	43·85	19·18	354 10	19·69	139 57	5·50
9	44·49	19·46	354 6	19·55	135 10	5·98
14	+45·11	+19·74	354 3	+19·41	130 19	+ 6·42
19	45·69	19·99	353 59	19·27	125 23	6·82
24	46·24	20·24	353 57	19·14	120 23	7·17
29	46·77	20·47	353 56	19·03	115 18	7·47
Sept. 3	+47·27	+20·69	353 56	+18·93	110 8	+ 7·72
8	47·75	20·90	353 58	18·86	104 55	7·91
13	48·21	21·10	354 2	18·80	99 39	8·05
18	48·66	21·29	354 9	18·76	94 20	8·12
23	+49·11	+21·48	354 18	+18·76	89 0	+ 8·14
28	49·56	21·67	354 30	18·77	83 39	8·10
Oct. 3	50·01	21·86	354 44	18·82	78 19	8·00
8	50·48	22·06	355 0	18·88	72 59	7·84
13	+50·96	+22·25	355 17	+18·97	67 41	+ 7·62
18	51·46	22·46	355 37	19·08	62 25	7·34
23	51·99	22·68	355 58	19·20	57 13	7·01
28	52·55	22·92	356 20	19·34	52 3	6·62
Nov. 2	+53·15	+23·17	356 43	+19·49	46 58	+ 6·17
7	53·77	23·43	357 5	19·64	41 56	5·69
12	54·44	23·72	357 27	19·78	36 58	5·16
17	55·14	24·01	357 49	19·92	32 3	4·59
22	+55·87	+24·33	358 9	+20·06	27 13	+ 3·98
27	56·63	24·65	358 27	20·17	22 25	3·34
Dec. 2	57·42	25·00	358 43	20·27	17 39	2·67
7	58·23	25·35	358 57	20·35	12 56	1·98
12	+59·06	+25·71	359 9	+20·41	8 14	+ 1·27
17	59·90	26·07	359 18	20·44	3 34	+ 0·55
22	60·74	26·44	359 25	20·44	358 53	− 0·17
27	61·58	26·80	359 29	20·43	354 13	0·89
32	+62·43	+27·17	359 31	+20·38	349 31	− 1·61

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APPARENT PLACES OF α URSÆ MINORIS (*Polaris*), FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		Day of the Month.
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	
	h m 1 8	° ′ 88 34	h m 1 7	° ′ 88 34	h m 1 7	° ′ 88 34	h m 1 7	° ′ 88 34	
	s	″	s	″	s	″	s	″	
1	25·62	33·9	60·00	33·7	41·40	28·6	32·93	19·5	1
2	24·82	34·0	59·21	33·6	40·90	28·3	32·91	19·2	2
3	24·00	34·1	58·43	33·5	40·42	28·0	32·91	18·9	3
4	23·17	34·2	57·66	33·4	39·95	27·7	32·93	18·6	4
5	22·34	34·3	56·89	33·3	39·49	27·5	32·96	18·3	5
6	21·51	34·3	56·13	33·1	39·05	27·2	33·01	18·0	6
7	20·67	34·4	55·38	33·0	38·62	26·9	{32·86 32·86}	{17·7 17·4}	7
8	19·84	34·4	54·64	32·8	38·20	26·7	33·26	17·1	8
9	19·00	34·5	53·90	32·6	37·80	26·4	33·38	16·8	9
10	18·16	34·5	53·18	32·5	37·41	26·1	33·51	16·5	10
11	17·32	34·5	52·47	32·3	37·04	25·9	33·66	16·2	11
12	16·48	34·6	51·76	32·2	36·69	25·6	33·82	15·8	12
13	15·63	34·6	51·07	32·0	36·35	25·3	34·00	15·5	13
14	14·79	34·6	50·38	31·8	36·02	25·0	34·19	15·2	14
15	13·95	34·6	49·70	31·6	35·71	24·7	34·40	14·9	15
16	13·10	34·6	49·04	31·4	35·42	24·5	34·63	14·6	16
17	12·26	34·6	48·38	31·2	35·14	24·2	34·88	14·3	17
18	11·42	34·5	47·73	31·0	34·88	23·9	35·14	14·1	18
19	10·59	34·5	47·10	30·8	34·63	23·6	35·42	13·8	19
20	9·75	34·5	46·47	30·6	34·40	23·3	35·71	13·5	20
21	8·92	34·5	45·85	30·4	34·19	23·0	36·01	13·2	21
22	8·09	34·4	45·25	30·2	33·99	22·6	36·33	12·9	22
23	7·26	34·4	44·66	30·0	33·81	22·3	36·66	12·6	23
24	6·43	34·4	44·09	29·8	33·65	22·0	37·01	12·3	24
25	5·61	34·3	43·53	29·6	33·50	21·7	37·38	12·0	25
26	4·79	34·3	42·98	29·3	33·37	21·4	37·76	11·7	26
27	3·98	34·2	42·44	29·0	33·25	21·1	38·15	11·5	27
28	3·17	34·1	41·91	28·8	33·15	20·8	38·56	11·2	28
29	2·37	34·0	41·40	28·6	33·07	20·5	38·98	10·9	29
30	1·57	33·9	- -	- -	33·01	20·2	39·42	10·7	30
31	0·78	33·8	- -	- -	32·96	19·8	39·87	10·4	31
32	0·00	33·7	- -	- -	32·93	19·5	- -	- -	32

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APPARENT PLACES OF α URSÆ MINORIS (*Polaris*), FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	MAY.		JUNE.		JULY.		AUGUST.		Day of the Month.
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	
	h m s 1 7	° ′ ″ 88 34	h m s 1 7	° ′ ″ 88 34	h m s 1 8	° ′ ″ 88 34	h m s 1 8	° ′ ″ 88 34	
1	39·87	10·4	59·70	4·3	25·59	3·1	52·70	6·8	1
2	40·34	10·1	60·49	4·2	26·49	3·1	53·52	7·0	2
3	40·82	9·9	61·29	4·1	27·39	3·1	54·33	7·2	3
4	41·31	9·7	62·10	4·0	28·29	3·2	55·13	7·4	4
5	41·81	9·4	62·91	3·8	29·19	3·2	55·92	7·6	5
6	42·33	9·2	63·73	3·7	30·09	3·3	56·71	7·8	6
7	42·86	8·9	64·56	3·6	31·00	3·3	57·49	8·1	7
8	43·40	8·7	65·39	3·5	31·90	3·4	58·27	8·3	8
9	43·96	8·5	66·23	3·5	32·80	3·5	59·04	8·6	9
10	44·53	8·2	67·07	3·4	33·70	3·6	59·80	8·8	10
11	45·11	8·0	67·92	3·3	34·59	3·7	60·56	9·0	11
12	45·70	7·8	68·77	3·2	35·48	3·8	61·31	9·3	12
13	46·30	7·6	69·63	3·2	36·37	3·9	62·05	9·5	13
14	46·92	7·4	70·49	3·1	37·26	4·0	62·78	9·7	14
15	47·55	7·2	71·35	3·1	38·15	4·1	63·50	10·0	15
16	48·19	6·9	72·22	3·0	39·04	4·2	64·22	10·2	16
17	48·84	6·7	73·09	3·0	39·92	4·3	64·93	10·5	17
18	49·50	6·5	73·97	2·9	40·80	4·4	65·63	10·8	18
19	50·16	6·3	74·85	2·9	41·68	4·5	66·32	11·1	19
20	50·84	6·1	75·73	2·9	42·55	4·7	67·01	11·4	20
21	51·53	6·0	76·61	2·9	43·42	4·9	67·68	11·7	21
22	52·23	5·8	77·50	2·9	44·29	5·1	68·35	12·0	22
23	52·94	5·7	78·39	2·9	45·15	5·2	69·01	12·2	23
24	53·66	5·5	79·28	2·9	46·01	5·3	69·66	12·5	24
25	54·38	5·3	80·17	2·9	46·86	5·5	70·30	12·8	25
26	55·11	5·1	81·07	2·9	47·71	5·6	70·94	13·1	26
27	55·85	4·9	81·97	2·9	48·55	5·8	71·57	13·4	27
28	56·61	4·8	82·87	3·0	49·39	6·0	72·18	13·7	28
29	57·38	4·6	83·77	3·0	50·23	6·2	72·78	14·0	29
30	58·15	4·5	84·68	3·0	51·06	6·4	73·37	14·3	30
31	58·92	4·4	85·59	3·1	51·88	6·6	73·95	14·7	31
32	59·70	4·3	- -	- -	52·70	6·8	74·52	15·0	32

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APPARENT PLACES OF α URSÆ MINORIS (*Polaris*), FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.		Day of the Month.
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	
	h m 1 9	° ′ 88 34	h m 1 9	° ′ 88 34	h m 1 9	° ′ 88 34	h m 1 8	° ′ 88 34	
	s	″	s	″	s	″	s	″	
1	14·52	15·0	26·58	25·6	27·04	37·4	75·29	47·0	1
2	15·08	15·3	26·80	26·0	26·84	37·7	74·71	47·3	2
3	15·64	15·7	27·00	26·3	26·63	38·1	74·11	47·5	3
4	16·19	16·0	27·19	26·7	26·40	38·5	73·50	47·8	4
5	16·72	16·3	27·36	27·1	26·16	38·8	72·88	48·0	5
6	17·24	16·6	27·52	27·5	25·90	39·1	72·25	48·3	6
7	17·75	16·9	27·68	27·9	25·63	39·5	71·61	48·6	7
8	18·25	17·3	27·82	28·2	25·35	39·8	70·97	48·8	8
9	18·74	17·7	27·94	28·6	25·05	40·2	70·32	49·0	9
10	19·22	18·0	28·05	29·0	24·74	40·5	69·66	49·3	10
11	19·69	18·3	28·15	29·4	24·42	40·9	68·99	49·5	11
12	20·15	18·7	28·23	29·8	24·08	41·2	68·31	49·7	12
13	20·59	19·0	28·30	30·2	23·73	41·5	67·62	49·9	13
14	21·02	19·4	28·35	30·6	23·37	41·9	66·92	50·1	14
15	21·44	19·7	28·39	30·9	22·99	42·2	66·20	50·3	15
16	21·86	20·1	28·42	31·3	22·60	42·5	65·48	50·5	16
17	22·26	20·4	28·44	31·7	22·20	42·9	64·76	50·7	17
18	22·65	20·8	28·44	32·1	21·78	43·2	64·03	50·8	18
19	23·02	21·2	28·43	32·5	21·35	43·5	63·29	51·0	19
20	23·38	21·5	28·40	32·9	20·91	43·8	62·54	51·2	20
21	23·73	21·9	28·36	33·2	20·46	44·1	61·78	51·3	21
22	24·07	22·2	28·31	33·6	20·00	44·4	61·02	51·5	22
23	24·40	22·6	28·25	34·0	19·52	44·7	60·25	51·7	23
24	24·72	23·0	28·17	34·4	19·03	45·0	59·47	51·8	24
25	25·03	23·4	28·08	34·8	18·53	45·3	58·68	52·0	25
26	25·32	23·7	27·97	35·2	18·02	45·6	57·89	52·1	26
27	25·60	24·1	27·85	35·5	17·49	45·9	57·10	52·2	27
28	25·86	24·5	27·71	35·9	16·95	46·2	56·30	52·4	28
29	26·11	24·8	27·56	36·3	16·40	46·5	55·50	52·5	29
30	26·35	25·2	27·40	36·6	15·85	46·7	54·70	52·6	30
31	26·58	25·6	27·23	37·0	15·29	47·0	53·89	52·7	31
32	- -	- -	27·04	37·4	- -	- -	53·07	52·8	32

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APPARENT PLACES OF δ URSÆ MINORIS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		Day of the Month.
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.	
	h m	° ′	h m	° ′	h m	° ′	h m	° ′	
	18 16	86 35	18 16	86 35	18 16	86 35	18 17	86 35	
	s	″	s	″	s	″	s	″	
1	41·69	63·2	44·73	53·6	52·38	47·8	3·28	46·8	1
2	41·69	62·9	44·93	53·3	52·71	47·7	3·63	46·9	2
3	41·68	62·6	45·14	53·1	53·04	47·5	3·98	46·9	3
4	41·68	62·3	45·36	52·8	53·38	47·4	4·33	47·0	4
5	41·69	62·0	45·58	52·6	53·72	47·3	4·68	47·1	5
6	41·71	61·6	45·81	52·3	54·06	47·2	5·02	47·2	6
7	41·74	61·3	46·05	52·1	54·40	47·1	5·36	47·3	7
8	41·78	60·9	46·29	51·8	54·75	47·0	5·70	47·4	8
9	41·82	60·6	46·53	51·6	55·09	47·0	6·04	47·5	9
10	41·87	60·2	46·78	51·4	55·44	46·9	6·37	47·6	10
11	41·93	59·9	47·03	51·1	55·79	46·8	6·70	47·7	11
12	41·99	59·5	47·29	50·9	56·14	46·7	7·03	47·8	12
13	42·06	59·2	47·56	50·6	56·50	46·6	7·36	47·9	13
14	42·14	58·9	47·83	50·4	56·86	46·6	7·68	48·0	14
15	42·23	58·6	48·10	50·2	57·21	46·6	8·00	48·2	15
16	42·32	58·2	48·38	50·0	57·56	46·5	8·32	48·3	16
17	42·42	57·9	48·66	49·8	57·92	46·5	8·64	48·5	17
18	42·53	57·6	48·95	49·6	58·28	46·5	8·95	48·7	18
19	42·64	57·3	49·24	49·4	58·64	46·4	9·26	48·9	19
20	42·76	57·0	49·54	49·2	59·00	46·4	9·56	49·0	20
21	42·89	56·7	49·84	49·0	59·36	46·4	9·86	49·2	21
22	43·02	56·4	50·15	48·8	59·72	46·4	10·16	49·4	22
23	43·16	56·1	50·46	48·6	60·07	46·4	10·45	49·6	23
24	43·31	55·8	50·77	48·5	60·43	46·5	10·74	49·8	24
25	43·46	55·5	51·08	48·3	60·79	46·5	11·02	50·0	25
26	43·62	55·2	51·40	48·2	61·15	46·6	11·30	50·2	26
27	43·79	55·0	51·72	48·1	61·51	46·6	11·58	50·4	27
28	43·97	54·7	52·05	48·0	61·87	46·7	11·85	50·6	28
29	44·15	54·4	52·38	47·8	62·22	46·7	12·12	50·8	29
30	44·34	54·1	- -	- -	62·58	46·8	12·38	51·0	30
31	44·53	53·9	- -	- -	62·93	46·8	12·64	51·2	31
32	44·73	53·6	- -	- -	63·28	46·8	- -	- -	32

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APPARENT PLACES OF δ URSÆ MINORIS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	MAY.		JUNE.		JULY.		AUGUST.		Day of the Month.
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	
	h m	° ′	h m	° ′	h m	° ′	h m	° ′	
	18 17	86 35	18 17	86 36	18 17	86 36	18 17	86 36	
	s	″	s	″	s	″	s	″	
1	12·64	51·2	17·97	0·0	17·52	9·8	11·33	19·0	1
2	12·89	51·4	18·05	0·3	17·41	10·2	11·05	19·3	2
3	13·14	51·6	18·12	0·6	17·29	10·5	10·76	19·6	3
4	13·38	51·9	18·19	1·0	17·16	10·8	10·47	19·8	4
5	13·62	52·1	18·25	1·3	17·03	11·2	10·17	20·0	5
6	13·86	52·4	18·30	1·6	16·89	11·5	9·87	20·2	6
7	14·09	52·7	18·34	1·9	16·75	11·8	9·56	20·5	7
8	14·31	53·0	18·38	2·2	16·60	12·1	9·25	20·7	8
9	14·53	53·2	18·42	2·6	16·44	12·4	8·94	21·0	9
10	14·74	53·5	18·45	2·9	16·28	12·7	8·62	21·2	10
11	14·95	53·8	18·47	3·2	16·11	13·0	8·30	21·4	11
12	15·15	54·0	18·48	3·5	15·94	13·3	7·97	21·6	12
13	15·35	54·3	18·48	3·9	15·76	13·6	7·64	21·8	13
14	15·54	54·6	18·48	4·2	15·58	13·9	7·30	22·0	14
15	15·72	54·8	18·48	4·5	15·39	14·2	6·96	22·2	15
16	15·90	55·1	18·47	4·8	15·20	14·5	6·62	22·4	16
17	16·07	55·4	18·45	5·2	15·00	14·8	6·27	22·6	17
18	16·24	55·7	18·42	5·5	14·79	15·1	5·92	22·8	18
19	16·40	56·0	18·39	5·9	14·57	15·4	5·57	23·0	19
20	16·56	56·3	18·35	6·2	14·35	15·7	5·21	23·2	20
21	16·71	56·6	18·31	6·5	14·13	16·0	4·85	23·4	21
22	16·86	56·9	18·26	6·9	13·90	16·3	4·49	23·6	22
23	17·00	57·2	18·20	7·2	13·67	16·6	4·12	23·8	23
24	17·13	57·5	18·14	7·5	13·43	16·9	3·75	23·9	24
25	17·26	57·8	18·07	7·9	13·18	17·2	3·38	24·1	25
26	17·38	58·1	17·99	8·2	12·93	17·5	3·00	24·2	26
27	17·50	58·4	17·91	8·6	12·68	17·7	2·62	24·4	27
28	17·61	58·7	17·82	8·9	12·42	18·0	2·24	24·5	28
29	17·71	59·1	17·73	9·2	12·16	18·2	1·85	24·7	29
30	17·80	59·4	17·63	9·5	11·89	18·5	1·46	24·9	30
31	17·89	59·7	17·52	9·8	11·61	18·8	1·07	25·1	31
32	17·97	60·0	- -	- -	11·33	19·0	0·68	25·2	32

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APPARENT PLACES OF δ URSÆ MINORIS, FOR THE UPPER TRANSIT AT GREENWICH.

Day of the Month.	SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.		Day of the Month.
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	
	h m 18 16	° ′ 86 36	h m 18 16	° ′ 86 36	h m 18 16	° ′ 86 36	h m 18 16	° ′ 86 36	
	s	″	s	″	s	″	s	″	
1	60·68	25·2	48·10	27·3	35·37	24·7	26·06	17·8	1
2	60·28	25·3	47·67	27·3	35·00	24·5	25·83	17·5	2
3	59·88	25·5	47·24	27·2	34·63	24·3	25·60	17·3	3
4	59·48	25·6	46·82	27·2	34·26	24·1	25·38	17·0	4
5	59·08	25·7	46·39	27·2	33·90	24·0	25·17	16·7	5
6	58·68	25·8	45·96	27·1	33·54	23·8	24·96	16·4	6
7	58·27	26·0	45·53	27·1	33·19	23·6	24·76	16·1	7
8	57·86	26·1	45·10	27·1	32·84	23·4	24·57	15·8	8
9	57·45	26·2	44·68	27·0	32·49	23·2	24·39	15·5	9
10	57·03	26·3	44·26	27·0	32·15	23·0	24·21	15·2	10
11	56·62	26·4	43·83	26·9	31·81	22·8	24·04	14·9	11
12	56·20	26·5	43·41	26·9	31·47	22·6	23·87	14·6	12
13	55·78	26·5	42·99	26·8	31·14	22·4	23·71	14·3	13
14	55·36	26·6	42·57	26·7	30·82	22·2	23·56	14·0	14
15	54·94	26·7	42·15	26·6	30·50	22·0	23·41	13·7	15
16	54·52	26·7	41·74	26·5	30·18	21·8	23·27	13·4	16
17	54·10	26·8	41·32	26·4	29·87	21·6	23·14	13·1	17
18	53·68	26·8	40·91	26·3	29·56	21·4	23·02	12·7	18
19	53·25	26·9	40·50	26·2	29·26	21·1	22·90	12·4	19
20	52·83	26·9	40·09	26·1	28·96	20·8	22·79	12·1	20
21	52·40	26·9	39·68	26·0	28·67	20·5	22·69	11·7	21
22	51·97	27·0	39·28	25·9	28·38	20·3	22·60	11·4	22
23	51·54	27·0	38·88	25·8	28·09	20·0	22·51	11·1	23
24	51·11	27·0	38·48	25·7	27·82	19·7	22·43	10·8	24
25	50·68	27·1	38·08	25·6	27·55	19·5	{m : 56 / m : 59}	{m : 5 / m : 1}	25
26	50·26	27·1	37·69	25·5	27·29	19·2	22·23	9·8	26
27	49·83	27·1	37·30	25·4	27·03	18·9	22·17	9·5	27
28	49·40	27·2	36·91	25·2	26·78	18·6	22·12	9·1	28
29	48·97	27·2	36·52	25·1	26·53	18·4	22·08	8·7	29
30	48·54	27·2	36·13	25·0	26·29	18·1	22·05	8·4	30
31	48·10	27·3	35·75	24·8	26·06	17·8	22·03	8·1	31
32	- -	- -	35·37	24·7	- -	- -	22·02	7·8	32

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Andromedæ.				γ Pegasi. (*Algenib*)				β Hydri.			
	R. A.		Dec. *North.*		R. A.		Dec. *North.*		R. A.		Dec. *South.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	0 1		28 19		0 6		14 24		0 18		78 1	
Jan. 1		13·08		37·1		5·55		48·2		24·55		90·1
			0·13				0·11				0·94	
11		12·95		36·2		5·44		47·3		23·61		88·9
			0·13				0·10				0·87	
21		12·82		35·0		5·34		46·4		22·74		87·1
			0·11				0·09				0·77	
31		12·71		33·6		5·25		45·4		21·97		84·8
			0·09				0·08				0·66	
Feb. 10		12·62		32·0		5·17		44·4		21·31		82·0
			0·06				0·06				0·54	
20		12·56		30·4		5·11		43·4		20·77		78·9
			0·03				0·03				0·40	
Mar. 2		12·53		28·8		5·08		42·5		20·37		75·5
			0·01				0·01				0·25	
12		12·54		27·3		5·09		41·7		20·12		71·8
			0·05				0·05				0·09	
22		12·59		25·8		5·14		41·1		20·03		68·0
			0·10				0·09				0·08	
Apr. 1		12·69		24·7		5·23		40·8		20·11		63·7
			0·15				0·13				0·24	
11		12·84		24·0		5·36		40·8		20·35		59·9
			0·19				0·17				0·40	
21		13·03		23·5		5·53		41·1		20·75		56·2
			0·23				0·21				0·55	
May 1		13·26		23·4		5·74		41·7		21·30		52·7
			0·27				0·25				0·69	
11		13·53		23·7		5·99		42·7		21·99		49·4
			0·30				0·28				0·81	
21		13·83		24·5		6·27		43·9		22·80		46·5
			0·33				0·30				0·91	
31		14·16		25·6		6·57		45·4		23·71		44·0
			0·35				0·32				1·00	
June 10		14·51		27·0		6·89		47·1		24·71		42·0
			0·35				0·33				1·06	
20		14·86		28·8		7·22		49·1		25·77		40·5
			0·35				0·32				1·10	
30		15·21		30·8		7·54		51·2		26·87		39·5
			0·33				0·32				1·11	
July 10		15·54		33·1		7·86		53·4		27·98		39·1
			0·32				0·30				1·07	
20		15·86		35·5		8·16		55·6		29·05		39·3
			0·29				0·28				1·01	
30		16·15		38·0		8·44		57·7		30·06		40·0
			0·26				0·25				0·92	
Aug. 9		16·41		40·5		8·69		59·8		30·98		41·2
			0·23				0·21				0·80	
19		16·64		43·0		8·90		61·8		31·78		43·0
			0·18				0·18				0·66	
29		16·82		45·5		9·08		63·6		32·44		45·2
			0·14				0·14				0·49	
Sept. 8		16·96		47·8		9·22		65·3		32·93		47·8
			0·10				0·10				0·31	
18		17·06		50·0		9·32		66·7		33·24		50·7
			0·06				0·07				0·11	
28		17·12		52·0		9·39		68·0		33·35		53·7
			0·02				0·03				0·08	
Oct. 8		17·14		53·8		9·42		69·0		33·27		56·7
			0·01				0·01				0·27	
18		17·13		55·4		9·41		69·8		33·00		59·7
			0·04				0·03				0·45	
28		17·09		56·7		9·38		70·3		32·55		62·5
			0·07				0·05				0·61	
Nov. 7		17·02		57·7		9·33		70·6		31·94		65·0
			0·09				0·08				0·75	
17		16·93		58·4		9·25		70·7		31·19		67·1
			0·11				0·09				0·85	
27		16·82		58·8		9·16		70·6		30·34		68·7
			0·12				0·10				0·93	
Dec. 7		16·70		58·9		9·06		70·3		29·42		69·7
			0·13				0·11				0·97	
17		16·57		58·6		8·95		69·8		28·45		70·1
			0·14				0·11				0·98	
27		16·43		58·1		8·84		69·2		27·47		69·9
			0·13				0·12				0·96	
37		16·30		57·2		8·72		68·4		26·51		69·0

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	12 Ceti.				α Cassiopeæ.				β Ceti.			
	R. A.		Dec. *South.*		R. A.		Dec. *North.*		R. A.		Dec. *South.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	0 22		4 43		0 32		55 46		0 36		18 44	
Jan. 1	57·64	0·11	29·4	0·6	39·14	0·28	50·9	0·6	37·56	0·13	62·4	0·4
11	57·53	0·11	30·0	0·5	38·86	0·27	50·3	1·0	37·43	0·12	62·8	0·2
21	57·42	0·09	30·5	0·4	38·59	0·25	49·3	1·4	37·31	0·11	63·0	0·1
31	57·33	0·08	30·9	0·2	38·34	0·23	47·9	1·9	37·20	0·10	62·9	0·3
Feb. 10	57·25	0·07	31·1	0·0	38·11	0·19	46·0	2·2	37·10	0·08	62·6	0·7
20	57·18	0·04	31·1	0·1	37·92	0·13	43·8	2·4	37·02	0·06	61·9	0·9
Mar. 2	57·14	0·00	31·0	0·4	37·79	0·07	41·4	2·5	36·96	0·03	61·0	1·1
12	57·14	0·02	30·6	0·6	37·72	0·01	38·9	2·5	36·93	0·01	59·9	1·5
22	57·16	0·07	30·0	0·9	37·71	0·07	36·4	2·7	36·94	0·05	58·4	1·8
Apr. 1	57·23	0·11	29·1	1·1	37·78	0·15	33·7	2·2	36·99	0·09	56·6	1·9
11	57·34	0·15	28·0	1·4	37·93	0·22	31·5	1·9	37·08	0·13	54·7	2·1
21	57·49	0·19	26·6	1·5	38·15	0·29	29·6	1·5	37·21	0·18	52·6	2·2
May 1	57·68	0·22	25·1	1·8	38·44	0·35	28·1	1·1	37·39	0·21	50·4	2·4
11	57·90	0·25	23·3	1·9	38·79	0·41	27·0	0·7	37·60	0·25	48·0	2·4
21	58·15	0·28	21·4	2·0	39·20	0·45	26·3	0·1	37·85	0·28	45·6	2·4
31	58·43	0·31	19·4	2·1	39·65	0·47	26·2	0·4	38·13	0·31	43·2	2·3
June 10	58·74	0·31	17·3	2·1	40·12	0·49	26·6	0·8	38·44	0·32	40·9	2·2
20	59·05	0·32	15·2	2·1	40·61	0·50	27·4	1·3	38·76	0·32	38·7	2·1
30	59·37	0·32	13·1	2·0	41·11	0·48	28·7	1·8	39·08	0·33	36·6	1·8
July 10	59·69	0·30	11·1	1·8	41·59	0·47	30·5	2·2	39·41	0·31	34·8	1·6
20	59·99	0·28	9·3	1·6	42·06	0·44	32·7	2·4	39·72	0·30	33·2	1·2
30	60·27	0·26	7·7	1·4	42·50	0·39	35·1	2·8	40·02	0·28	32·0	0·9
Aug. 9	60·53	0·23	6·3	1·2	42·89	0·35	37·9	3·0	40·30	0·24	31·1	0·6
19	60·76	0·19	5·1	0·9	43·24	0·30	40·9	3·1	40·54	0·21	30·5	0·2
29	60·95	0·15	4·2	0·6	43·54	0·24	44·0	3·2	40·75	0·17	30·3	0·1
Sept. 8	61·10	0·11	3·6	0·3	43·78	0·18	47·2	3·3	40·92	0·13	30·4	0·5
18	61·21	0·08	3·3	0·0	43·96	0·13	50·5	3·2	41·05	0·09	30·9	0·8
28	61·29	0·05	3·3	0·1	44·09	0·07	53·7	3·1	41·14	0·06	31·7	1·0
Oct. 8	61·34	0·01	3·4	0·4	44·16	0·01	56·8	3·0	41·20	0·02	32·7	1·2
18	61·35	0·02	3·8	0·5	44·17	0·04	59·8	2·7	41·22	0·02	33·9	1·3
28	61·33	0·04	4·3	0·7	44·13	0·09	62·5	2·4	41·20	0·04	35·2	1·3
Nov. 7	61·29	0·07	5·0	0·7	44·04	0·13	64·9	2·1	41·16	0·07	36·5	1·4
17	61·22	0·08	5·7	0·8	43·91	0·18	67·0	1·7	41·09	0·09	37·9	1·3
27	61·14	0·10	6·5	0·8	43·73	0·21	68·7	1·2	41·00	0·10	39·2	1·2
Dec. 7	61·04	0·10	7·3	0·8	43·52	0·24	69·9	0·8	40·90	0·12	40·4	0·9
17	60·94	0·11	8·1	0·7	43·28	0·26	70·7	0·2	40·78	0·12	41·3	0·8
27	60·83	0·11	8·8	0·6	43·02	0·28	70·9	0·3	40·66	0·13	42·1	0·6
37	60·72		9·4		42·74		70·6		40·53		42·7	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	ε Piscium.				θ¹ Ceti.				η Piscium.			
	R. A.		Dec. *North.*		R. A.		Dec. *South.*		R. A.		Dec. *North.*	
	h m		° ′		h m		° ′		h m		° ′	
	0 55		7 8		1 17		8 53		1 24		14 37	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	44·99	0·12	35·3	0·6	5·72	0·12	64·1	0·7	4·17	0·12	51·5	0·6
11	44·87	0·11	34·7	0·7	5·60	0·12	64·8	0·5	4·05	0·12	50·9	0·7
21	44·76	0·11	34·0	0·7	5·48	0·13	65·3	0·4	3·93	0·13	50·2	0·7
31	44·65		33·3		5·35		65·7		3·80		49·5	
		0·11		0·7		0·11		0·1		0·12		0·8
Feb. 10	44·54	0·09	32·6	0·5	5·24	0·11	65·8	0·1	3·68	0·11	48·7	0·8
20	44·45	0·06	32·1	0·5	5·13	0·09	65·7	0·3	3·57	0·09	47·9	0·8
Mar. 2	44·39	0·04	31·6	0·3	5·04	0·06	65·4	0·5	3·48	0·07	47·1	0·6
12	44·35		31·3		4·98		64·9		3·41		46·5	
		0·01		0·1		0·03		0·8		0·04		0·6
22	44·34	0·03	31·2	0·1	4·95	0·01	64·1	1·0	3·37	0·01	45·9	0·4
Apr. 1	44·37	0·09	31·3	0·3	4·96	0·05	63·1	1·4	3·38	0·05	45·5	0·1
11	44·46	0·12	31·6	0·6	5·01	0·09	61·7	1·6	3·43	0·10	45·4	0·1
21	44·58		32·2		5·10		60·1		3·53		45·5	
		0·16		0·9		0·14		1·7		0·14		0·4
May 1	44·74	0·20	33·1	1·2	5·24	0·18	58·4	1·9	3·67	0·19	45·9	0·6
11	44·94	0·24	34·3	1·3	5·42	0·21	56·5	2·0	3·86	0·22	46·5	0·9
21	45·18	0·27	35·6	1·6	5·63	0·25	54·5	2·1	4·08	0·26	47·4	1·2
31	45·45		37·2		5·88		52·4		4·34		48·6	
		0·30		1·8		0·28		2·2		0·29		1·4
June 10	45·75	0·31	39·0	1·9	6·16	0·30	50·2	2·2	4·63	0·31	50·0	1·6
20	46·06	0·32	40·9	1·9	6·46	0·31	48·0	2·1	4·94	0·33	51·6	1·8
30	46·38	0·32	42·8	2·0	6·77	0·32	45·9	2·0	5·27	0·33	53·4	1·8
July 10	46·70		44·8		7·09		43·9		5·60		55·2	
		0·31		2·0		0·31		1·8		0·32		1·9
20	47·01	0·30	46·8	1·9	7·40	0·30	42·1	1·6	5·92	0·31	57·1	1·9
30	47·31	0·28	48·7	1·8	7·70	0·29	40·5	1·4	6·23	0·30	59·0	1·9
Aug. 9	47·59	0·24	50·5	1·6	7·99	0·26	39·1	1·0	6·53	0·27	60·9	1·8
19	47·83		52·1		8·25		38·1		6·80		62·7	
		0·22		1·4		0·23		0·7		0·24		1·7
29	48·05	0·18	53·5	1·2	8·48	0·20	37·4	0·4	7·04	0·22	64·4	1·5
Sept. 8	48·23	0·15	54·7	1·0	8·68	0·17	37·0	0·2	7·26	0·18	65·9	1·3
18	48·38	0·12	55·7	0·8	8·85	0·13	36·8	0·2	7·44	0·14	67·2	1·1
28	48·50		56·5		8·98		37·0		7·58		68·3	
		0·08		0·5		0·10		0·5		0·11		1·0
Oct. 8	48·58	0·04	57·0	0·3	9·08	0·06	37·5	0·7	7·69	0·08	69·3	0·7
18	48·62	0·02	57·3	0·1	9·14	0·03	38·2	0·9	7·77	0·05	70·0	0·5
28	48·64	0·01	57·4	0·1	9·17	0·00	39·1	1·0	7·82	0·02	70·5	0·4
Nov. 7	48·63		57·3		9·17		40·1		7·84		70·9	
		0·03		0·2		0·02		1·1		0·01		0·1
17	48·60	0·06	57·1	0·4	9·15	0·05	41·2	1·1	7·83	0·03	71·0	0·0
27	48·54	0·08	56·7	0·4	9·10	0·07	42·3	1·1	7·80	0·06	71·0	0·2
Dec. 7	48·46	0·09	56·3	0·6	9·03	0·09	43·4	1·0	7·74	0·08	70·8	0·3
17	48·37		55·7		8·94		44·4		7·66		70·5	
		0·10		0·7		0·11		1·0		0·10		0·5
27	48·27	0·11	55·0	0·6	8·83	0·11	45·4	0·8	7·56	0·11	70·0	0·5
37	48·16		54·4		8·72		46·2		7·45		69·5	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Eridani. (*Achernar*)				ν Piscium.				β Arietis.			
	R. A.		Dec. *South.*		R. A.		Dec. *North.*		R. A.		Dec. *North.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	I 32		57 56		I 34		4 47		I 46		20 7	
Jan. 1	33·51	0·34	47·8	0·3	13·29	0·12	5·8	0·7	59·41	0·12	49·6	0·5
11	33·17	0·34	48·1	0·2	13·17	0·12	5·1	0·7	59·29	0·13	49·1	0·6
21	32·83	0·33	47·9	0·8	13·05	0·12	4·4	0·6	59·16	0·14	48·5	0·7
31	32·50		47·1		12·93		3·8		59·02		47·8	
		0·32		1·4		0·12		0·5		0·14		0·8
Feb. 10	32·18		45·7		12·81		3·3		58·88		47·0	
		0·29		1·8		0·11		0·4		0·13		0·9
20	31·89		43·9		12·70		2·9		58·75		46·1	
		0·25		2·3		0·10		0·3		0·11		0·9
Mar. 2	31·64		41·6		12·60		2·6		58·64		45·2	
		0·21		2·7		0·07		0·2		0·09		0·9
12	31·43		38·9		12·53		2·4		58·55		44·3	
		0·16		3·0		0·05		0·1		0·06		0·8
22	31·27		35·9		12·48		2·3		58·49		43·5	
		0·09		3·2		0·01		0·2		0·02		0·7
I	31·18		32·7		12·47		2·5		58·47		42·8	
		0·03		3·5		0·04		0·5		0·03		0·5
11	31·15		29·2		12·51		3·0		58·50		42·3	
		0·05		3·9		0·08		0·7		0·08		0·3
21	31·20		25·3		12·59		3·7		58·58		42·0	
		0·11		3·6		0·13		0·9		0·13		0·0
May 1	31·31		21·7		12·72		4·6		58·71		42·0	
		0·19		3·6		0·17		1·2		0·17		0·2
11	31·50		18·1		12·89		5·8		58·88		42·2	
		0·26		3·4		0·21		1·4		0·21		0·6
21	31·76		14·7		13·10		7·2		59·09		42·8	
		0·31		3·2		0·24		1·6		0·25		0·8
31	32·07		11·5		13·34		8·8		59·34		43·6	
		0·37		2·9		0·28		1·7		0·29		1·0
June 10	32·44		8·6		13·62		10·5		59·63		44·6	
		0·42		2·6		0·30		1·8		0·31		1·3
20	32·86		6·0		13·92		12·3		59·94		45·9	
		0·45		2·2		0·31		1·9		0·33		1·5
30	33·31		3·8		14·23		14·2		60·27		47·4	
		0·47		1·7		0·31		1·9		0·33		1·7
July 10	33·78		2·1		14·54		16·1		60·60		49·1	
		0·47		1·2		0·32		1·9		0·34		1·7
29	34·25		0·9		14·86		18·0		60·94		50·8	
		0·47		0·7		0·31		1·8		0·32		1·8
30	34·72		0·2		15·17		19·8		61·26		52·6	
		0·46		0·0		0·29		1·7		0·31		1·9
Aug. 9	35·18		0·2		15·46		21·5		61·57		54·5	
		0·42		0·5		0·27		1·5		0·29		1·8
19	35·60		0·7		15·73		23·0		61·86		56·3	
		0·38		1·1		0·24		1·2		0·27		1·8
29	35·98		1·8		15·97		24·2		62·13		58·1	
		0·33		1·6		0·22		1·1		0·24		1·6
Sept. 8	36·31		3·4		16·19		25·3		62·37		59·7	
		0·26		2·0		0·18		0·8		0·21		1·5
18	36·57		5·4		16·37		26·1		62·58		61·2	
		0·20		2·4		0·15		0·6		0·17		1·4
28	36·77		7·8		16·52		26·7		62·75		62·6	
		0·13		2·7		0·12		0·3		0·14		1·2
Oct. 8	36·90		10·5		16·64		27·0		62·89		63·8	
		0·06		2·9		0·08		0·1		0·11		1·0
18	36·96		13·4		16·72		27·1		63·00		64·8	
		0·01		3·0		0·06		0·1		0·07		0·8
28	36·95		16·4		16·78		27·0		63·07		65 6	
		0·08		2·9		0·02		0·3		0·04		0·7
Nov. 7	36·87		19·3		16·80		26·7		63·11		66·3	
		0·14		2·8		0·00		0·4		0·02		0·4
17	36·73		22·1		16·80		26·3		63·13		66·7	
		0·20		2·5		0·03		0·5		0·01		0·3
27	36·53		24·6		16·77		25·8		63·12		67·0	
		0·25		2·1		0·05		0·6		0·04		0·1
Dec. 7	36·28		26·7		16·72		25·2		63·08		67·1	
		0·28		1·7		0·07		0·7		0·07		0·1
17	36·00		28·4		16·65		24·5		63·01		67·0	
		0·31		1·2		0·09		0·7		0·09		0·2
27	35·69		29·6		16·56		23·8		62·92		66·8	
		0·33		0·6		0·11		0·7		0·11		0·4
37	35·36		30·2		16·45		23·1		62·81		66·4	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Arietis.				67 Ceti.				ξ² Ceti.			
	R. A.		Dec. *North.*		R. A.		Dec. *South.*		R. A.		Dec. *North.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	1 59		22 48		2 10		7 3		2 20		7 50	
Jan. 1	22·12		24·9		4·55		49·1		47·89		13·6	
		0·12		0·3		0·11		0·8		0·10		0·7
11	22·00		24·6		4·44		49·9		47·79		12·9	
		0·13		0·5		0·12		0·7		0·12		0·6
21	21·87		24·1		4·32		50·6		47·67		12·3	
		0·14		0·7		0·14		0·5		0·13		0·6
31	21·73		23·4		4·18		51·1		47·54		11·7	
		0·14		0·9		0·14		0·3		0·14		0·6
Feb. 10	21·59		22·5		4·04		51·4		47·40		11·1	
		0·14		0·9		0·13		0·1		0·14		0·5
20	21·45		21·6		3·91		51·5		47·26		10·6	
		0·13		0·9		0·12		0·1		0·13		0·4
Mar. 2	21·32		20·7		3·79		51·4		47·13		10·2	
		0·10		1·0		0·11		0·3		0·11		0·3
12	21·22		19·7		3·68		51·1		47·02		9·9	
		0·07		0·9		0·08		0·6		0·08		0·1
22	21·15		18·8		3·60		50·5		46·94		9·8	
		0·03		0·8		0·04		0·8		0·04		0·0
Apr. 1	21·12		18·0		3·56		49·7		46·90		9·8	
		0·02		0·6		0·01		1·1		0·01		0·2
11	21·14		17·4		3·55		48·6		46·89		10·0	
		0·06		0·5		0·04		1·3		0·03		0·4
21	{21·20 / 21·20}		{16·9 / 16·8}		3;59		47·3		46·92		10·4	
		0·12		0·2	24	0·09		1·6	27	0·09		0·6
May 1	21·32		16·6		3·68		45·7		47·01		11·0	
		0·16		0·1		0·13		1·8		0·13		0·9
11	21·48		16·7		3·81		43·9		47·14		11·9	
		0·21		0·3		0·17		1·9		0·17		1·1
21	21·69		17·0		3·98		42·0		47·31		13·0	
		0·25		0·6		0·21		2·0		0·21		1·3
31	21·94		17·6		4·19		40·0		47·52		14·3	
		0·28		0·9		0·25		2·1		0·25		1·4
June 10	22·22		18·5		4·44		37·9		47·77		15·7	
		0·31		1·1		0·27		2·1		0·28		1·6
20	22·53		19·6		4·71		35·8		48·05		17·3	
		0·33		1·4		0·29		2·1		0·29		1·7
30	22·86		21·0		5·00		33·7		48·34		19·0	
		0·34		1·5		0·31		2·0		0·31		1·7
July 10	23·20		22·5		5·31		31·7		48·65		20·7	
		0·34		1·6		0·31		1·9		0·32		1·8
20	23·54		24·1		5·62		29·8		48·97		22·5	
		0·33		1·8		0·31		1·6		0·31		1·7
30	23·87		25·9		5·93		28·2		49·28		24·2	
		0·32		1·8		0·30		1·4		0·31		1·6
Aug. 9	24·19		27·7		6·23		26·8		49·59		25·8	
		0·30		1·8		0·28		1·2		0·29		1·4
19	24·49		29·5		6·51		25·6		49·88		27·2	
		0·29		1·7		0·27		0·9		0·27		1·3
29	24·78		31·2		6·78		24·7		50·15		28·5	
		0·25		1·7		0·24		0·5		0·25		1·1
Sept. 8	25·03		32·9		7·02		24·2		50·40		29·6	
		0·22		1·6		0·21		0·2		0·23		0·8
18	25·25		34·5		7·23		24·0		50·63		30·4	
		0·19		1·4		0·18		0·1		0·19		0·7
28	25·44		35·9		7·41		24·1		50·82		31·1	
		0·15		1·4		0·15		0·4		0·16		0·4
Oct. 8	25·59		37·3		7·56		24·5		50·98		31·5	
		0·13		1·1		0·11		0·7		0·14		0·2
18	25·72		38·4		7·67		25·2		51·12		31·7	
		0·09		0·9		0·09		0·9		0·10		0·0
28	25·81		39·3		7·76		26·1		51·22		31·7	
		0·06		0·8		0·05		1·0		0·08		0·2
Nov. 7	25·87		40·1		7·81		27·1		51·30		31·5	
		0·03		0·6		0·02		1·1		0·04		0·3
17	25·90		40·7		7·83		28·2		51·34		31·2	
		0·01		0·5		0·00		1·2		0·02		0·4
27	25·89		41·2		7·83		29·4		51·36		30·8	
		0·03		0·2		0·03		1·2		0·02		0·6
Dec. 7	25·86		41·4		7·80		30·6		51·34		30·2	
		0·06		0·1		0·06		1·2		0·04		0·6
17	25·80		41·5		7·74		31·8		51·30		29·6	
		0·08		0·1		0·08		1·1		0·07		0·6
27	25·72		41·4		7·66		32·9		51·23		29·0	
		0·11		0·3		0·10		0·9		0·09		0·6
37	25·61		41·1		7·56		33·8		51·14		28·4	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	γ Ceti.		α Ceti.		δ Arietis.	
	R. A.	Dec. *North.*	R. A.	Dec. *North.*	R. A.	Dec. *North.*
	h m	° ′	h m	° ′	h m	° ′
	2 36	2 38	2 55	3 32	3 3	19 11
	s	″	s	″	s	″
Jan. 1	7·66	57·7	2·65	37·0	43·03	65·0
	s 0·10	″ 0·7	s 0·09	″ 0·6	s 0·09	″ 0·2
11	7·56	57·0	2·56	36·4	42·94	64·8
	0·12	0·7	0·11	0·7	0·11	0·4
21	7·44	56·3	2·45	35·7	42·83	64·4
	0·13	0·6	0·13	0·6	0·14	0·4
31	7·31	55·7	2·32	35·1	42·69	64·0
	0·14	0·5	0·14	0·5	0·15	0·6
Feb. 10	7·17	55·2	2·18	34·6	42·54	63·4
	0·14	0·4	0·15	0·4	0·16	0·6
20	7·03	54·8	2·03	34·2	42·38	62·8
	0·14	0·3	0·15	0·3	0·15	0·6
Mar. 2	6·89	54·5	1·88	33·9	42·23	62·2
	0·12	0·1	0·13	0·2	0·14	0·6
12	6·77	54·4	1·75	33·7	42·09	61·6
	0·10	0·1	0·10	0·1	0·12	0·6
22	6·67	54·5	1·65	33·8	41·97	61·0
	0·06	0·3	0·08	0·2	0·08	0·5
Apr. 1	6·61	54·8	1·57	34·0	41·89	60·5
	0·03	0·4	0·05	0·3	0·05	0·5
11	6·58	55·2	1·52	34·3	41·84	60·0
	0·02	0·7	0·00	0·6	0·00	0·3
21	6·60	55·9	1·52	34·9	41·84	59·7
	0·07	0·9	0·04	0·8	0·04	0·1
May 1	{6·67 / 6·67}	{56·8 / 56·9}	1·56	35·7	41·88	59·6
	0·11	1·1	1·66	0·10	36·8	1·1	0·10	0·1
11	6·78	58·0	1·80	38·1	41·98	59·7
	0·15	1·3	0·14	1·3	0·14	0·2
21	6·93	59·3	1·98	39·5	42·12	59·9
	0·20	1·5	0·18	1·4	0·19	0·5
31	7·13	60·8			42·31	60·4
	0·23	1·7	0·22	1·5	0·23	0·7
June 10	7·36	62·5	2·20	41·0	42·54	61·1
	0·26	1·7	0·25	1·6	0·27	0·9
20	7·62	64·2	2·45	42·6	42·81	62·0
	0·28	1·8	0·28	1·7	0·29	1·1
30	7·90	66·0	2·73	44·3	43·10	63·1
	0·31	1·8	0·29	1·8	0·31	1·2
July 10	8·21	67·8	3·02	46·1	43·41	64·3
	0·31	1·7	0·31	1·7	0·32	1·3
20	8·52	69·5	3·33	47·8	43·73	65·6
	0·31	1·7	0·31	1·6	0·33	1·4
30	8·83	71·2	3·64	49·4	44·06	67·0
	0·31	1·5	0·31	1·4	0·33	1·4
Aug. 9	9·14	72·7	3·95	50·8	44·39	68·4
	0·29	1·4	0·30	1·3	0·31	1·4
19	9·43	74·1	4·25	52·1	44·70	69·8
	0·27	1·1	0·28	1·1	0·31	1·3
29	9·70	75·2	4·53	53·2	45·01	71·1
	0·26	0·8	0·26	0·9	0·29	1·3
Sept. 8	9·96	76·0	4·79	54·1	45·30	72·4
	0·23	0·6	0·24	0·6	0·26	1·1
18	10·19	76·6	5·03	54·7	45·56	73·5
	0·20	0·4	0·22	0·4	0·24	1·0
28	10·39	77·0	5·25	55·1	45·80	74·5
	0·18	0·1	0·20	0·1	0·22	0·8
Oct. 8	10·57	77·1	5·45	55·2	46·02	75·3
	0·14	0·2	0·16	0·2	0·19	0·7
18	10·71	76·9	5·61	55·0	46·21	76·0
	0·12	0·4	0·14	0·3	0·15	0·6
28	10·83	76·5	5·75	54·7	46·36	76·6
	0·09	0·5	0·10	0·5	0·13	0·4
Nov. 7	10·92	76·0	5·85	54·2	46·49	77·0
	0·05	0·6	0·08	0·7	0·09	0·3
17	10·97	75·4	5·93	53·5	46·58	77·3
	0·02	0·8	0·04	0·8	0·06	0·2
27	10·99	74·6	5·97	52·7	46·64	77·5
	0·00	0·8	0·01	0·8	0·03	0·0
Dec. 7	10·99	73·8	5·98	51·9	46·67	77·5
	0·03	0·8	0·02	0·8	0·00	0·0
17	10·96	73·0	5·96	51·1	46·67	77·5
	0·06	0·9	0·04	0·8	0·04	0·1
27	10·90	72·1	5·92	50·3	46·63	77·4
	0·09	0·7	0·08	0·8	0·07	0·3
37	10·81	71·4	5·84	49·5	46·56	77·1

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Persei.			η Tauri.			γ¹ Eridani.		
	R. A.		Dec. *North.*	R. A.		Dec. *North.*	R. A.		Dec. *South.*
	h m	s	° ′ ″	h m	s	° ′ ″	h m	s	° ′ ″
	3 14		49 21	3 39		23 40	3 51		13 53
Jan. 1	27·47	0·15	64·1	15·72	0·07	30·7	34·61	0·08	82·4 1·4
11	27·32	0·19	64·9 0·8	15·65	0·10	30·7 0·0	34·53	0·11	83·8 1·4
21	27·13	0·22	65·4 0·5	15·55	0·13	30·6 0·1	34·42	0·13	85·0 1·2
31	26·91		65·6 0·2	15·42		30·3 0·3	34·29		86·0 1·0
		0·24	0·2		0·16	0·3		0·15	0·7
Feb. 10	26·67	0·25	65·4	15·26	0·17	30·0	34·14	0·17	86·7
20	26·42	0·24	64·8 0·6	15·09	0·17	29·5 0·5	33·97	0·18	87·0 0·3
Mar. 2	26·18	0·23	63·9 0·9	14·92	0·16	29·0 0·5	33·79	0·17	87·1 0·1
12	25·95		62·6 1·3	14·76		28·3 0·7	33·62		86·9 0·2
		0·20	1·5		0·15	0·6		0·16	0·5
22	25·75	0·15	61·1	14·61	0·12	27·7	33·46	0·13	86·4
Apr. 1	25·60	0·09	59·4 1·7	14·49	0·08	27·0 0·7	33·33	0·10	85·6 0·8
11	25·51	0·03	57·6 1·8	14·41	0·04	26·4 0·6	33·23	0·07	84·6 1·0
21	25·48		55·8 1·8	14·37		25·9 0·5	33·16		83·3 1·3
		0·03			0·01	0·4		0·02	1·6
May 1	25·51	0·11	54·0	14·38	0·06	25·5	33·14	0·02	81·7
11	{25·63 25·63}	0·18	{52·3 51·2} 1·5	14·44	0·13	25·2 0·3	33·16	0·07	79·9 1·8
21	25·81	0·24	50·7 1·2	14·57	0·16	25·2 0·0	33·23	0·12	77·7 2·2
31	26·05		49·5	14·73		25·2 0·0	33·35		75·5 2·2
		0·30	1·0		0·20	0·2		0·16	
June 10	26·35	0·35	48·5 0·6	14·93	0·24	25·4 0·5	33·51	0·20	73·3 2·3
20	26·70	0·38	47·9 0·3	15·17	0·27	25·9 0·7	33·71	0·23	71·0 2·2
30	27·08	0·42	47·6 0·0	15·44	0·31	26·6 0·8	33·94	0·26	68·8 2·2
July 10	27·50		47·6	15·75		27·4	34·20		66·6 2·0
		0·44	0·3		0·32	0·9		0·28	
20	27·94	0·45	47·9	16·07	0·33	28·3 1·1	34·48	0·29	64·6
30	28·39	0·45	48·6 0·7	16·40	0·34	29·4 1·1	34·77	0·30	62·8 1·8
Aug. 9	28·84	0·44	49·6 1·0	16·74	0·33	30·5 1·1	35·07	0·30	61·3 1·5
19	29·28		50·8 1·2	17·07		31·6 1·1	35·37		60·1 1·2
		0·43	1·4		0·32	1·1		0·29	0·8
29	29·71	0·40	52·2	17·39	0·31	32·7 1·1	35·66	0·29	59·3
Sept. 8	30·11	0·39	53·9 1·7	17·70	0·30	33·8 1·1	35·95	0·27	58·8 0·5
18	30·50	0·35	55·7 1·8	18·00	0·27	34·9 0·9	36·22	0·25	58·8 0·0
28	30·85		57·7 2·0	18·27		35·8 0·9	36·47		59·1 0·3
		0·31	2·0		0·25	0·9		0·24	0·8
Oct. 8	31·16	0·28	59·7	18·52	0·23	36·7 0·7	36·71	0·21	59·9
18	31·44	0·24	61·8 2·1	18·75	0·20	37·4 0·7	36·92	0·18	60·9 1·0
28	31·68	0·19	64·0 2·2	18·95	0·17	38·1 0·7	37·10	0·15	62·3 1·4
Nov. 7	31·87		66·1 2·1	19·12		38·6 0·5	37·25		64·0 1·7
		0·14	2·0		0·14	0·5		0·12	1·8
17	32·01	0·09	68·1	19·26	0·10	39·1 0·4	37·37	0·08	65·8
27	32·10	0·03	70·1 2·0	19·36	0·07	39·5 0·3	37·45	0·05	67·7 1·9
Dec. 7	32·13	0·02	71·9 1·8	19·43	0·03	39·8 0·3	37·50	0·01	69·6 1·9
17	32·11		73·5 1·6	19·46		40·0 0·2	37·51		71·4 1·8
		0·07	1·3		0·02	0·1		0·02	1·8
27	32·04	0·12	74·8	19·44	0·05	40·1 0·0	37·49	0·06	73·2 1·6
37	31·92		75·9 1·1	19·39		40·1	37·43		74·8

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	o^1 Eridani.		ε Tauri.		α Tauri. (*Aldebaran*)	
	R. A.	Dec. *South.*	R. A.	Dec. *North.*	R. A.	Dec. *North.*
	h m s	° ′ ″	h m s	° ′ ″	h m s	° ′ ″
	4 5	7 11	4 20	18 52	4 27	16 13
Jan. 1	6·93	66·6	32·47	15·3	59·14	42·5
		1·3		0·2		0·4
11	6·87	67·9	32·43	15·1	59·11	42·1
	0·09	1·1	0·07	0·2	0·07	0·3
21	6·78	69·0	32·36	14·9	59·04	41·8
	0·12	0·9	0·11	0·3	0·10	0·3
31	6·66	69·9	32·25	14·6	58·94	41·5
	0·15	0·6	0·14	0·3	0·14	0·3
Feb. 10	6·51	70·5	32·11	14·3	58·80	41·2
	0·16	0·5	0·16	0·3	0·16	0·4
20	6·35	71·0	31·95	14·0	58·64	40·8
	0·17	0·2	0·17	0·3	0·16	0·3
Mar. 2	6·18	71·2	31·78	13·7	58·48	40·5
	0·17	0·0	0·17	0·4	0·17	0·3
12	6·01	71·2	31·61	13·3	58·31	40·2
	0·15	0·3	0·16	0·4	0·17	0·4
22	5·86	70·9	31·45	12·9	58·14	39·8
	0·13	0·5	0·14	0·4	0·14	0·2
Apr. 1	5·73	70·4	31·31	12·5	58·00	39·6
	0·11	0·7	0·11	0·3	0·10	0·3
11	5·62	69·7	31·20	12·2	57·90	39·3
	0·07	1·0	0·08	0·3	0·09	0·1
21	5·55	68·7	31·12	11·9	57·81	39·2
	0·03	1·2	0·03	0·2	0·04	0·1
May 1	5·52	67·5	31·09	11·7	57·77	39·1
	0·01	1·4	0·02	0·0	0·01	0·1
11	5·53	66·1	31·11	11·7	57·78	39·2
	0·06	1·6	0·07	0·1	0·06	0·2
21	5·59	64·5	31·18	11·8	57·84	39·4
	0·12	2·0	0·12	0·2	0·11	0·4
31	5·71	62·5	31·30	12·0	57·95	39·8
	0·15	1·8	0·16	0·4	0·16	0·5
June 10	5·86	60·7	31·46	12·4	58·11	40·3
	0·19	2·0	0·20	0·5	0·19	0·7
20	6·05	58·7	31·66	12·9	58·30	41·0
	0·22	2·0	0·24	0·7	0·22	0·7
30	6·27	56·7	31·90	13·6	58·52	41·7
	0·25	1·9	0·27	0·8	0·26	0·9
July 10	6·52	54·8	32·17	14·4	58·78	42·6
	0·28	1·8	0·29	0·8	0·28	0·9
20	6·80	53·0	32·46	15·2	59·06	43·5
	0·28	1·7	0·30	0·9	0·30	0·9
30	7·08	51·3	32·76	16·1	59·36	44·4
	0·29	1·4	0·32	0·9	0·31	1·0
Aug. 9	7·37	49·9	33·08	17·0	59·67	45·4
	0·30	1·2	0·32	0·9	0·31	0·9
19	7·67	48·7	33·40	17·9	59·98	46·3
	0·30	0·9	0·31	0·9	0·31	0·8
29	7·97	47·8	33·71	18·8	60·29	47·1
	0·29	0·6	0·31	0·7	0·31	0·7
Sept. 8	8·26	47·2	34·02	19·5	60·60	47·8
	0·27	0·3	0·31	0·7	0·30	0·5
18	8·53	46·9	34·33	20·2	60·90	48·3
	0·26	0·2	0·29	0·5	0·29	0·4
28	8·79	47·1	34·62	20·7	61·19	48·7
	0·24	0·5	0·27	0·5	0·27	0·3
Oct. 8	9·03	47·6	34·89	21·2	61·46	49·0
	0·22	0·8	0·25	0·3	0·26	0·2
18	9·25	48·4	35·14	21·5	61·72	49·2
	0·19	1·0	0·23	0·2	0·23	0·0
28	9·44	49·4	35·37	21·7	61·95	49·2
	0·17	1·3	0·21	0·1	0·21	0·0
Nov. 7	9·61	50·7	35·58	21·8	62·16	49·2
	0·14	1·5	0·18	0·0	0·18	0·0
17	9·75	52·2	35·76	21·8	62·34	49·0
	0·10	1·5	0·14	0·1	0·14	0·3
27	9·85	53·7	35·90	21·7	62·48	48·7
	0·07	1·6	0·10	0·1	0·11	0·3
Dec. 7	9·92	55·3	36·00	21·6	62·59	48·4
	0·03	1·6	0·07	0·1	0·08	0·3
17	9·95	56·9	36·07	21·5	62·67	48·1
	0·00	1·5	0·02	0·2	0·03	0·3
27	9·95	58·4	36·09	21·3	62·70	47·8
	0·04	1·4	0·01	0·2	0·01	0·4
37	9·91	59·8	36·08	21·1	62·69	47·4

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	ι Aurigæ.				ε Leporis.				α Aurigæ. (*Capella*)			
	R. A.		Dec. *North.*		R. A.		Dec. *South.*		R. A.		Dec. *North.*	
	h m		° ′		h m		° ′		h m		° ′	
	4 47		32 56		4 59		22 33		5 6		45 51	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	59·41		40·4		36·76		37·8		28·72		16·4	
		0·01		0·6		0·04		2·1		0·01		1·3
11	59·40		41·0		36·72		39·9		28 71		17·7	
		0·07		0·5		0·08		1·9		0·07		1·1
21	59·33		41·5		36·64		41·8		28·64		18·8	
		0·11		0·3		0·12		1·5		0·13		0·9
31	59·22		41·8		36·52		43·3		28·51		19·7	
		0·15		0·2		0·16		1·2		0·17		0·7
Feb. 10	59·07		42·0		36·36		44·5		28·34		20·4	
		0·18		0·0		0·18		0·9		0·21		0·4
20	58·89		42·0		36·18		45·4		28·13		20·8	
		0·19		0·2		0·20		0·5		0·24		0·1
Mar. 2	58·70		41·8		35·98		45·9		27·89		20·9	
		0·20		0·3		0·20		0·1		0·25		0·2
12	58·50		41·5		35·78		46·0		27·64		20·7	
		0·19		0·5		0·20		0·3		0·24		0·5
22	58·31		41·0		35·58		45·7		27·40		20·2	
		0·17		0·7		0·18		0·6		0·23		0·8
Apr. 1	58·14		40·3		35·40		45·1		27·17		19·4	
		0·15		0·7		0·16		1·0		0·19		1·0
11	57·99		39·6		35·24		44·1		26 98		18·4	
		0·11		0·8		0·13		1·3		0·15		1·2
21	57·88		38·8		35·11		42·8		26·83		17·2	
		0·05		0·9		0·10		1·6		0·10		1·4
May 1	57·83		37·9		35·01		41·2		26·73		15·8	
		0·01		0·8		0·05		1·9		0·04		1·4
11	57·82		37·1		34·96		39·3		26·69		14·4	
		0·04		0·8		0·01		2·1		0·02		1·4
21	57·86		36·3		34·95		37·2		26·71		13·0	
		0·10		0·6		0·04		2·3		0·08		1·5
31	57·96		35·7		34·99		34·9		26·79		11·5	
		0·16		0·6		0·09		2·7		0·16		1·5
June 10	58·12		35·1		35·08		32·2		26·95		10·0	
		0·20		0·4		0·13		2·5		0·21		1·2
20	58·32		34·7		35·21		29·7		27·16		8·8	
		0·24		0·3		0·17		2·5		0·25		1·1
30	58·56		34·4		35·38		27·2		27·41		7·7	
		0·27		0·1		0·20		2·4		0·30		0·9
July 10	58·83		34·3		35·58		24·8		27·71		6·8	
		0·30		0·0		0·24		2·3		0·34		0·7
20	59·13		34·3		35·82		22·5		28·05		6·1	
		0·33		0·2		0·26		2·0		0·37		0·5
30	59·46		34·5		36·08		20·5		28·42		5·6	
		0·34		0·3		0·27		1·8		0·39		0·3
Aug. 9	59·80		34·8		36·35		18·7		28·81		5·3	
		0·35		0·5		0·29		1·5		0·41		0·1
19	60·15		35·3		36·64		17·2		29·22		5·2	
		0·36		0·5		0·30		1·0		0·42		0·1
29	60·51		35·8		36·94		16·2		29·64		5·3	
		0·35		0·5		0·30		0·5		0·42		0·3
Sept. 8	60·86		36·3		37·24		15·7		30·06		5·6	
		0·35		0·6		0·30		0·1		0·41		0·4
18	61·21		36·9		37·54		15·6		30·47		6·0	
		0·34		0·7		0·29		0·3		0·41		0·6
28	61·55		37·6		37·83		15·9		30·88		6·6	
		0·32		0·6		0·28		0·9		0·40		0·7
Oct. 8	61·87		38·2		38·11		16·8		31·28		7·3	
		0·31		0·7		0·26		1·3		0·38		0·9
18	62·18		38·9		38·37		18·1		31·66		8·2	
		0·28		0·6		0·24		1·7		0·36		1·1
28	62·46		39·5		38·61		19·8		32·02		9·3	
		0·26		0·7		0·22		2·1		0·32		1·1
Nov. 7	62·72		40·2		38·83		21·9		32·34		10·4	
		0·23		0·7		0·18		2·2		0·29		1·2
17	62·95		40·9		39·01		24·1		32·63		11·6	
		0·19		0·7		0·15		2·5		0·25		1·3
27	63·14		41·6		39·16		26·6		32·88		12·9	
		0·15		0·7		0·10		2·6		0·20		1·4
Dec. 7	63·29		42·3		39·26		29·2		33·08		14·3	
		0·11		0·7		0·07		2·5		0·14		1·5
17	63·40		43·0		39·33		31·7		33·22		15·8	
		0·05		0·7		0·03		2·4		0·08		1·4
27	63·45		43·7		39·36		34·1		33·30		17·2	
		0·01		0·5		0·02		2·3		0·02		1·3
37	63·46		44·2		39·34		36·4		33·32		18·5	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	β Orionis. (*Rigel*)				β Tauri.				δ Orionis.			
	R. A.		Dec. *South.*		R. A.		Dec. *North.*		R. A.		Dec. *South.*	
	h m		° ′		h m		° ′		h m		° ′	
	5 7		8 21		5 17		28 29		5 24		0 24	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	53·70		53·7		33·06		15·6		56·68		17·1	
11	53·68	0·02	55·3	1·6	33·07	0·01	16·0	0·4	56·68	0·00	18·4	1·3
21	53·63	0·05	56·7	1·4	33·03	0·04	16·3	0·3	56·65	0·03	19·5	1·1
31	53·54	0·09	57·9	1·2	32·95	0·08	16·5	0·2	56·58	0·07	20·5	1·0
		0·13		1·0		0·12		0·2		0·11		0·8
Feb. 10	53·41	0·15	58·9	0·7	32·83	0·16	16·7	0·1	56·47	0·14	21·3	0·6
20	53·26	0·17	59·6	0·4	32·67	0·18	16·8	0·1	56·33	0·16	21·9	0·4
Mar. 2	53·09	0·18	60·0	0·2	32·49	0·19	16·7	0·1	56·17	0·18	22·3	0·3
12	52·91		60·2		32·30		16·6		55·99		22·6	
		0·18		0·0		0·19		0·3		0·17		0·1
22	52·73	0·17	60·2	0·3	32·11	0·17	16·3	0·4	55·82	0·16	22·7	0·2
Apr. 1	52·56	0·14	59·9	0·6	31·94	0·15	15·9	0·5	55·66	0·15	22·5	0·3
11	52·42	0·12	59·3	0·8	31·79	0·13	15·4	0·5	55·51	0·12	22·2	0·4
21	52·30		58·5		31·66		14·9		55·39		21·8	
		0·08		1·0		0·09		0·6		0·08		0·7
May 1	52·22	0·04	57·5	1·3	31·57	0·03	14·3	0·6	55·31	0·05	21·1	0·8
11	52·18	0·00	56·2	1·4	31·54	0·01	13·7	0·5	55·26	0·01	20·3	1·0
21	52·18	0·05	54·8	1·6	31·55	0·07	13·2	0·5	55·25	0·04	19·3	1·1
31	52·23		53·2		31·62		12·7		55·29		18·2	
	s	0·10		1·9		0·11		0·4		0·08		1·3
June 10	52·33	0·13	51·3	1·9	{31·75 / 31·74}	0·16	{12·3 / 12·3}	0·3	55·37	0·14	16·9	1·5
20	52·46	0·17	49·4	1·8	31·90	0·20	12·0	0·2	55·51	0·16	15·4	1·4
30	52·63	0·21	47·6	1·9	32·10	0·24	11·8	0·0	55·67	0·19	14·0	1·5
July 10	52·84		45·7		32·34		11·8		55·86		12·5	
		0·23		1·8		0·27		0·0		0·23		1·4
20	53·07	0·25	43·9	1·6	32·61	0·30	11·8	0·2	56·09	0·24	11·1	1·3
30	53·32	0·27	42·3	1·5	32·91	0·31	12·0	0·2	56·33	0·26	9·8	1·2
Aug. 9	53·59	0·28	40·8	1·2	33·22	0·32	12·2	0·2	56·59	0·28	8·6	1·0
19	53·87		39·6		33·54		12·4		56·87		7·6	
		0·29		0·9		0·34		0·3		0·29		0·8
29	54·16	0·29	38·7	0·6	33·88	0·34	12·7	0·3	57·16	0·29	6·8	0·5
Sept. 8	54·45	0·29	38·1	0·2	34·22	0·34	13·0	0·3	57·45	0·29	6·3	0·3
18	54·74	0·28	37·9	0·1	34·56	0·33	13·3	0·3	57·74	0·29	6·0	0·1
28	55·02		38·0		34·89		13·6		58·03		6·1	
		0·28		0·5		0·32		0·3		0·28		0·4
Oct. 8	55·30	0·26	38·5	0·9	35·21	0·31	13·9	0·2	58·31	0·27	6·5	0·6
18	55·56	0·24	39·4	1·2	35·52	0·30	14·1	0·3	58·58	0·26	7·1	0·9
28	55·80	0·22	40·6	1·5	35·82	0·27	14·4	0·2	58·84	0·23	8·0	1·2
Nov. 7	56·02		42·1		36·09		14·6		59·07		9·2	
		0·19		1·6		0·25		0·3		0·21		1·3
17	56·21	0·17	43·7	1·8	36·34	0·22	14·9	0·3	59·28	0·19	10·5	1·4
27	56·38	0·13	45·5	1·9	36·56	0·18	15·2	0·3	59·47	0·16	11·9	1·5
Dec. 7	56·51	0·09	47·4	1·9	36·74	0·13	15·5	0·3	59·63	0·11	13·4	1·4
17	56·60		49·3		36·87		15·8		59·74		14·8	
		0·05		1·8		0·08		0·3		0·07		1·5
27	56·65	0·00	51·1	1·6	36·95	0·04	16·1	0·4	59·81	0·03	16·3	1·3
37	56·65		52·7		36·99		16·5		59·84		17·6	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Leporis.				ε Orionis.				α Columbæ.			
	R.A.		Dec. *South.*		R.A.		Dec. *South.*		R.A.		Dec. *South.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	5 26		17 55		5 29		1 17		5 34		34 8	
Jan. 1		38·26		27·9		11·93		36·3		39·41		60·7
11		38·26	0·00	30·0	2·1	11·94	0·01	37·6	1·3	39·38	0·03	63·5
21		38·20	0·06	31·9	1·9	11·91	0·03	38·8	1·2	39·30	0·08	66·0
31		38·10	0·10	33·5	1·6	11·83	0·08	39·8	1·0	39·17	0·13	68·1
			0·13		1·3		0·11		0·8		0·17	1·7
Feb. 10		37·97	0·16	34·8	1·0	11·72	0·14	40·6	0·6	39·00	0·20	69·8
20		37·81	0·18	35·8	0·6	11·58	0·16	41·2	0·5	38·80	0·23	71·1
Mar. 2		37·63	0·19	36·4	0·3	11·42	0·17	41·7	0·3	38·57	0·24	71·9
12		37·44		36·7		11·25		42·0		38·33		72·3
			0·20		0·0		0·17		0·0		0·24	0·0
22		37·24	0·18	36·7	0·4	11·08	0·17	42·0	0·1	38·09	0·23	72·3
Apr. 1		37·06	0·17	36·3	0·7	10·91	0·15	41·9	0·3	37·86	0·21	71·8
11		36·89	0·14	35·6	1·0	10·76	0·12	41·6	0·5	37·65	0·19	70·9
21		36·75		34·6		10·64		41·1		37·46		69·5
			0·10		1·3		0·09		0·7		0·15	1·7
May 1		36·65	0·07	33·3	1·5	10·55	0·05	40·4	0·8	37·31	0·11	67·8
11		36·58	0·03	31·8	1·8	10·50	0·01	39·6	1·0	37·20	0·07	65·8
21		36·55	0·02	30·0	2·0	10·49	0·03	38·6	1·2	37·13	0·02	63·5
31		36·57		28·0		10·52		37·4		37·11		60·9
			0·06		2·1		0·08		1·3		0·04	2·7
June 10		36·63	0·12	25·9	2·5	10·60	0·13	36·1	1·5	37·15	0·09	58·2
20		36·75	0·15	23·4	2·3	10·73	0·16	34·6	1·5	37·24	0·13	55·1
30		36·90	0·18	21·1	2·2	10·89	0·19	33·1	1·5	37·37	0·17	52·2
July 10		37·08		18·9		11·08		31·6		37·54		49·4
			0·21		2·1		0·22		1·4		0·21	2·6
20		37·29	0·24	16·8	2·0	11·30	0·24	30·2	1·4	37·75	0·24	46·8
30		37·53	0·26	14·8	1·7	11·54	0·26	28·8	1·2	37·99	0·26	44·4
Aug. 9		37·79	0·28	13·1	1·4	11·80	0·27	27·6	1·0	38·25	0·29	42·3
19		38·07		11·7		12·07		26·6		38·54		40·5
			0·29		1·1		0·29		0·8		0·31	1·3
29		38·36		10·6		12·36		25·8		38·85		39·2
Sept. 8		38·65	0·29	10·0	0·6	12·65	0·29	25·3	0·5	39·17	0·32	38·4
18		38·95	0·30	9·8	0·2	12·94	0·29	25·0	0·3	39·49	0·32	38·2
28		39·24	0·29	10·0	0·2	13·23	0·29	25·1	0·1	39·81	0·32	38·5
			0·28		0·7		0·28		0·4		0·32	0·9
Oct. 8		39·52	0·27	10·7	1·1	13·51	0·27	25·5	0·7	40·13	0·30	39·4
18		39·79	0·26	11·8	1·5	13·78	0·26	26·2	0·9	40·43	0·27	40·8
28		40·05	0·23	13·3	1·8	14·04	0·24	27·1	1·2	40·70	0·25	42·7
Nov. 7		40·28		15·1		14·28		28·3		40·95		45·1
			0·21		2·1		0·22		1·4		0·22	2·7
17		40·49	0·18	17·2	2·3	14·50	0·18	29·7	1·5	41·17	0·19	47·8
27		40·67	0·14	19·5	2·4	14·68	0·16	31·2	1·5	41·36	0·14	50·7
Dec. 7		40·81	0·10	21·9	2·4	14·84	0·12	32·7	1·5	41·50	0·10	53·8
17		40·91		24·3		14·96		34·2		41·60		56·9
			0·06		2·4		0·07		1·5		0·04	3·0
27		40·97	0·01	26·7	2·2	15·03	0·04	35·7	1·4	41·64	0·01	59·9
37		40·98		28·9		15·07		37·1		41·63		62·8

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Orionis.				ν Orionis.				μ Geminorum.			
	R. A.		Dec. *North.*		R. A.		Dec. *North.*		R. A.		Dec. *North.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	5 47		7 22		5 59		14 46		6 14		22 34	
Jan. 1		41·20		41·7		40·65		55·7		35·70		53·8
			0·03				0·05				0·07	
11		41·23		40·8		40·70		55·2		35·77		53·8
			0·01				0·00				0·02	
21		41·22		40·0		40·70		54·8		35·79		53·8
			0·05				0·04				0·03	
31		41·17		39·3		40·66		54·5		35·76		53·9
			0·10				0·09				0·08	
Feb. 10		41·07		38·8		40·57		54·3		35·68		54·0
			0·13				0·12				0·12	
20		40·94		38·3		40·45		54·0		35·56		54·1
			0·15				0·15				0·15	
Mar. 2		40·79		38·0		40·30		53·9		35·41		54·2
			0·17				0·17				0·17	
12		40·62		37·8		40·13		53·8		35·24		54·2
			0·17				0·18				0·18	
22		40·45		37·7		39·95		53·7		35·06		54·2
Apr. 1		40·28	0·17	37·7	0·0	39·78	0·17	53·6	0·1	34·88	0·18	54·2
			0·15		0·1		0·16		0·0		0·17	
11		40·13		37·8		39·62		53·6		34·71		54·0
			0·13		0·2		0·13		0·0		0·15	
21		40·00		38·0		39·49		53·6		34·56		53·8
			0·09		0·3		0·10		0·1		0·11	
May 1		39·91		38·3		39·39		53·7		34·45		53·7
			0·06		0·5		0·07		0·1		0·08	
11		39·85		38·8		39·32		53·8		34·37		53·4
			0·02		0·5		0·02		0·1		0·04	
21		39·83		39·3		39·30		53·9		34·33		53·2
			0·02		0·7		0·01		0·3		0·01	
31		39·85		40·0		39·31		54·2		34·34		53·1
			0·07		0·7		0·06		0·3		0·05	
June 10		39·92		40·7		39·37		54·5		34·39		52·9
			0·12		0·9		0·10		0·3		0·09	
20	[18]	40·04		41·6		{39·47 / 39·42}		{54·8 / 54·9}		34·48		52·8
			0·15		0·9		0·14		0·5	[24]	0·15	
30		40·19		42·5		39·63		55·4		34·63		52·7
			0·18		1·0		0·18		0·5		0·18	
July 10		40·37		43·5		39·81		55·9		34·81		52·7
			0·21		0·9		0·21		0·5		0·20	
20		40·58		44·4		40·02		56·4		35·01		52·8
			0·24		1·0		0·24		0·5		0·24	
30		40·82		45·4		40·26		56·9		35·25		52·8
			0·25		0·9		0·26		0·5		0·26	
Aug. 9		41·07		46·3		40·52		57·4		35·51		52·9
			0·27		0·7		0·27		0·4		0·28	
19		41·34		47·0		40·79		57·8		35·79		52·9
			0·29		0·6		0·29		0·3		0·30	
29		41·63		47·6		41·08		58·1		36·09		52·9
			0·29		0·3		0·30		0·2		0·31	
Sept. 8		41·92		47·9		41·38		58·3		36·40		52·8
			0·30		0·1		0·30		0·1		0·31	
18		42·22		48·0		41·68		58·4		36·71		52·7
			0·30		0·0		0·31		0·1		0·32	
28		42·52		48·0		41·99		58·3		37·03		52·5
			0·29		0·3		0·30		0·3		0·33	
Oct. 8		42·81		47·7		42·29		58·0		37·36		52·2
			0·29		0·5		0·31		0·4		0·32	
18		43·10		47·2		42·60		57·6		37·68		51·8
			0·27		0·7		0·29		0·5		0·31	
28		43·37		46·5		42·89		57·1		37·99		51·5
			0·26		0·8		0·27		0·6		0·30	
Nov. 7		43·63		45·7		43·16		56·5		38·29		51·1
			0·24		1·0		0·26		0·7		0·28	
17		43·87		44·7		43·42		55·8		38·57		50·6
			0·21		1·1		0·23		0·7		0·26	
27		44·08		43·6		43·65		55·1		38·83		50·2
			0·18		1·1		0·20		0·7		0·22	
Dec. 7		44·26		42·5		43·85		54·4		39·05		49·9
			0·15		1·1		0·16		0·7		0·19	
17		44·41		41·4		44·01		53·7		39·24		49·6
			0·10		1·1		0·12		0·6		0·14	
27		44·51		40·3		44·13		53·1		39·38		49·5
			0·05		0·9		0·07		0·6		0·09	
37		44·56		39·4		44·20		52·5		39·47		49·4

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Argûs. (*Canopus*) R.A.		Dec. *South.*		γ Geminorum. R.A.		Dec. *North.*		51 (Hev.) Cephei. R.A.		Dec. *North.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	6 20		52 36		6 29		16 30		6 34		87 14	
Jan. 1		54·75		75·5		43·46		52·5		46·56		53·4
			0·04				0·08				0·34	
11		54·71		79·0		43·54		52·1		46·90		56·5
			0·10				0·03				0·60	
21		54·61		82·2		43·57		51·7		46·30		59·6
			0·17				0·02				1·47	
31		54·44		85·1		43·55		51·5		44·83		62·5
			0·23				0·06				2·28	
Feb. 10		54·21		87·6		43·49		51·3		42·55		65·1
			0·28				0·11				3·00	
20		53·93		89·6		43·38		51·2		39·55		67·3
			0·32				0·14				3·57	
Mar. 2		53·61		91·1		43·24		51·2		35·98		69·0
			0·34				0·16				3·97	
12		53·27		92·2		43·08		51·1		32·01		70·2
			0·36				0·17				4·22	
22		52·91		92·8		42·91		51·1		27·79		70·7
			0·36				0·18				4·28	
Apr. 1		52·55		92·8		42·73		51·1		23·51		70·6
			0·35				0·16				4·18	
11		52·20		92·2		42·57		51·1		19·33		70·0
			0·32				0·15				3·89	
21		51·88		91·2		42·42		51·2		15·44		68·8
			0·29				0·12				3·47	
May 1		51·59		89·7		42·30		51·2		11·97		67·1
			0·24				0·09				2·93	
11		51·35		87·8		42·21		51·2		9·04		64·9
			0·19				0·04				2·28	
21		51·16		85·6		42·17		51·3		6·76		62·3
			0·14				0·01				1·56	
31		51·02		83·0		42·16		51·5		5·20		59·4
			0·08				0·03				0·81	
June 10		50·94		80·1		42·19		51·6		4·39		56·4
			0·02				0·08				0·02	
20		50·92		77·0		42·27		51·8		4·37		53·2
			0·05				0·12				0·89	
30		50·97		73·5		42·39		52·1		5·26		49·8
			0·11				0·16				1·61	
July 10		51·08		70·3		42·55		52·4		6·87		46·6
			0·17				0·19				2·32	
20		51·25		67·2		42·74		52·7		9·19		43·6
			0·22				0·21				3·00	
30		51·47		64·3		42·95		53·0		12·19		40·8
			0·27				0·24				3·59	
Aug. 9		51·74		61·7		43·19		53·2		15·78		38·2
			0·31				0·26				4·13	
19		52·05		59·5		43·45		53·4		19·91		36·0
			0·35				0·28				4·58	
29		52·40		57·7		43·73		53·5		24·49		34·1
			0·37				0·29				4·93	
Sept. 8		52·77		56·4		44·02		53·5		29·42		32·6
			0·40				0·30				5·20	
18		53·17		55·7		44·32		53·4		34·62		31·5
			0·41				0·30				5·36	
28		53·58		55·6		44·62		53·1		39·98		30·9
			0·41				0·31				5·43	
Oct. 8		53·99		56·2		44·93		52·7		45·41		30·8
			0·40				0·31				5·36	
18		54·39		57·4		45·24		52·1		50·77		31·1
			0·38				0·31				5·19	
28		54·77		59·3		45·55		51·5		55·96		32·0
			0·35				0·30				4·90	
Nov. 7		55·12		61·7		45·85		50·8		60·86		33·3
			0·32				0·28				4·48	
17		55·44		64·5		46·13		50·0		65·34		35·0
			0·27				0·26				3·93	
27		55·71		67·7		46·39		49·2		69·27		37·2
			0·21				0·23				3·36	
Dec. 7		55·92		71·2		46·62		48·4		72·53		39·7
			0·14				0·19				2·54	
17		56·06		74·8		46·81		47·8		75·07		42·5
			0·07				0·15				1·69	
27		56·13		78·4		46·96		47·2		76·76		45·6
			0·00				0·10				0·78	
37		56·13		82·0		47·06		46·6		77·54		48·7

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Canis Majoris. (*Sirius*) R.A.		Dec. *South.*		ε Canis Majoris. R.A.		Dec. *South.*		γ Canis Majoris. R.A.		Dec. *South.*	
	h m		° ′		h m		° ′		h m		° ′	
	6 39		16 31		6 53		28 46		6 57		15 25	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	3·76	0·06	42·4	2·4	12·10	0·06	67·7	3·0	30·49	0·09	49·8	2·4
11	3·82	0·01	44·8	2·2	12·16	0·01	70·7	2·8	30·58	0·03	52·2	2·2
21	3·83	0·03	47·0	2·0	12·17	0·04	73·5	2·5	30·61	0·02	54·4	2·0
31	3·80		49·0		12·13		76·0		30·59		56·4	
		0·09		1·7		0·09		2·2		0·06		1·7
Feb. 10	3·71	0·12	50·7	1·4	12·04	0·14	78·2	1·9	30·53	0·11	58·1	1·4
20	3·59	0·15	52·1	1·1	11·90	0·17	80·1	1·5	30·42	0·14	59·5	1·2
Mar. 2	3·44	0·17	53·2	0·7	11·73	0·19	81·6	1·0	30·28	0·16	60·7	0·8
12	3·27		53·9		11·54		82·6		30·12		61·5	
		0·19		0·5		0·21		0·7		0·18		0·5
22	3·08	0·19	54·4	0·1	11·33	0·22	83·3	0·3	29·94	0·18	62·0	0·2
Apr. 1	2·89	0·18	54·5	0·2	11·11	0·21	83·6	0·2	29·76	0·18	62·2	0·2
11	2·71	0·17	54·3	0·5	10·90	0·20	83·4	0·5	29·58	0·17	62·0	0·4
21	2·54		53·8		10·70		82·9		29·41		61·6	
		0·15		0·8		0·18		0·9		0·15		0·7
May 1	2·39	0·11	53·0	1·1	10·52	0·15	82·0	1·3	29·26	0·12	60·9	1·0
11	2·28	0·08	51·9	1·3	10·37	0·11	80·7	1·6	29·14	0·09	59·9	1·2
21	2·20	0·04	50·6	1·6	10·26	0·07	79·1	1·9	29·05	0·05	58·7	1·5
31	2·16		49·0		10·19		77·2		29·00		57·2	
		0·00		1·7		0·03		2·1		0·01		1·6
June 10	2·16	0·04	47·3	1·9	10·16	0·00	75·1	2·3	28·99	0·02	55·6	1·8
20	2·20	0·07	45·4	1·9	10·16	0·05	72·8	2·5	29·01	0·06	53·8	1·8
30	{2·27 2·28}	0·12	{43·5 43·3}	2·0	10·21	0·10	70·3	2·7	29·07	0·11	52·0	2·1
July 10	2·40		41·3		10·31		67·6		29·18		49·9	
		0·15		2·0		0·13		2·5		0·14		2·0
20	2·55	0·18	39·3	1·8	10·44	0·17	65·1	2·3	29·32	0·16	47·9	1·8
30	2·73	0·21	37·5	1·7	10·61	0·20	62·8	2·2	29·48	0·19	46·1	1·7
Aug. 9	2·94	0·23	35·8	1·4	10·81	0·23	60·6	1·9	29·67	0·22	44·4	1·4
19	3·17		34·4		11·04		58·7		29·89		43·0	
		0·25		1·1		0·25		1·5		0·24		1·1
29	3·42	0·27	33·3	0·8	11·29	0·27	57·2	1·1	30·13	0·26	41·9	0·8
Sept. 8	3·69	0·28	32·5	0·4	11·56	0·29	56·1	0·7	30·39	0·28	41·1	0·4
18	3·97	0·29	32·1	0·1	11·85	0·31	55·4	0·2	30·67	0·29	40·7	0·0
28	4·26		32·2		12·16		55·2		30·96		40·7	
		0·29		0·5		0·32		0·4		0·29		0·4
Oct. 8	4·55	0·30	32·7	0·9	12·48	0·31	55·6	0·9	31·25	0·30	41·1	0·9
18	4·85	0·29	33·6	1·4	12·79	0·31	56·5	1·5	31·55	0·30	42·0	1·3
28	5·14	0·28	35·0	1·8	13·10	0·30	58·0	1·9	31·85	0·29	43·3	1·6
Nov. 7	5·42		36·8		13·40		59·9		32·14		44·9	
		0·27		2·0		0·29		2·3		0·28		2·0
17	5·69	0·24	38·8	2·3	13·69	0·26	62·2	2·6	32·42	0·26	46·9	2·2
27	5·93	0·21	41·1	2·5	13·95	0·22	64·8	2·9	32·68	0·22	49·1	2·4
Dec. 7	6·14	0·17	43·6	2·6	14·17	0·19	67·7	3·0	32·90	0·19	51·5	2·5
17	6·31		46·2		14·36		70·7		33·09		54·0	
		0·13		2·5		0·14		3·1		0·15		2·5
27	6·44	0·09	48·7	2·5	14·50	0·08	73·8	3·0	33·24	0·11	56·5	2·5
37	6·53		51·2		14·58		76·8		33·35		59·0	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	δ Geminorum.				α² Geminorum. (*Castor*)				α Canis Minoris. (*Procyon*)			
	R.A.		Dec. *North.*		R.A.		Dec. *North.*		R.A.		Dec. *North.*	
	h m		° ′		h m		° ′		h m		° ′	
	7 11		22 13		7 25		32 11		7 32		5 34	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	51·81	0·12	63·2	0·2	46·45	0·16	19·0	0·4	3·77	0·13	40·8	1·3
11	51·93	0·08	63·0	0·1	46·61	0·10	19·4	0·5	3·90	0·08	39·5	1·2
21	52·01	0·02	62·9	0·1	46·71	0·03	19·9	0·6	3·98	0·03	38·3	1·0
31	52·03		63·0		46·74		20·5		4·01		37·3	
		0·03		0·1		0·02		0·7		0·01		0·8
Feb. 10	52·00	0·07	63·1	0·3	46·72	0·07	21·2	0·8	4·00	0·06	36·5	0·6
20	51·93	0·12	63·4	0·2	46·65	0·12	22·0	0·7	3·94	0·10	35·9	0·5
Mar. 2	51·81	0·15	63·6	0·2	46·53	0·15	22·7	0·6	3·84	0·13	35·4	0·3
12	51·66		63·8		46·38		23·3		3·71		35·1	
		0·17		0·3		0·18		0·5		0·15		0·2
22	51·49	0·18	64·1	0·2	46·20	0·19	23·8	0·3	3·56	0·16	34·9	0·0
Apr. 1	51·31	0·17	64·3	0·1	46·01	0·20	24·1	0·2	3·40	0·17	34·9	0·1
11	51·14	0·16	64·4	0·0	45·81	0·18	24·3	0·1	3·23	0·16	35·0	0·2
21	50·98		64·4		45·63		24·4		3·07		35·2	
		0·14		0·0		0·16		0·2		0·14		0·3
May 1	50·84	0·12	64·4	0·0	45·47	0·14	24·2	0·3	2·93	0·11	35·5	0·4
11	50·72	0·08	64·4	0·1	45·33	0·10	23·9	0·4	2·82	0·09	35·9	0·4
21	50·64	0·04	64·3	0·2	45·23	0·06	23·5	0·5	2·73	0·06	36·3	0·6
31	50·60		64·1		45·17		23·0		2·67		36·9	
		0·00		0·1		0·02		0·6		0·02		0·6
June 10	50·60	0·04	64·0	0·2	45·15	0·03	22·4	0·7	2·65	0·01	37·5	0·6
20	50·64	0·08	63·8	0·2	45·18	0·07	21·7	0·8	2·66	0·05	38·1	0·7
30	50·72	0·12	63·6	0·2	45·25	0·10	20·9	0·8	2·71	0·08	38·8	0·7
July 10	50·84		63·4		45·35		20·1		2·79		39·5	
		0·16		0·2		0·16		0·9		0·13		0·7
20	51·00	0·18	63·2	0·2	45·51	0·19	19·2	0·9	2·92	0·14	40·2	0·7
30	51·18	0·21	63·0	0·3	45·70	0·21	18·3	0·9	3·06	0·17	40·9	0·5
Aug. 9	51·39	0·24	62·7	0·3	45·91	0·25	17·4	0·8	3·23	0·20	41·4	0·4
19	51·63		62·4		46·16		16·6		3·43		41·8	
		0·26		0·3		0·27		0·9		0·23		0·3
29	51·89	0·27	62·1	0·5	46·43	0·29	15·7	0·9	3·66	0·24	42·1	0·0
Sept. 8	52·16	0·30	61·6	0·5	46·72	0·32	14·8	0·9	3·90	0·26	42·1	0·2
18	52·46	0·31	61·1	0·6	47·04	0·33	13·9	0·9	4·16	0·28	41·9	0·4
28	52·77		60·5		47·37		13·0		4·44		41·5	
		0·32		0·7		0·34		0·9		0·29		0·7
Oct. 8	53·09	0·33	59·8	0·8	47·71	0·35	12·1	0·9	4·73	0·30	40·8	0·9
18	53·42	0·32	59·0	0·8	48·06	0·36	11·2	0·7	5·03	0·30	39·9	1·1
28	53·74	0·33	58·2	0·8	48·42	0·36	10·5	0·7	5·33	0·30	38·8	1·3
Nov. 7	54·07		57·4		48·78		9·8		5·63		37·5	
		0·32		0·8		0·35		0·6		0·30		1·5
17	54·39	0·30	56·6	0·8	49·13	0·33	9·2	0·4	5·93	0·29	36·0	1·6
27	54·69	0·27	55·8	0·7	49·46	0·31	8·8	0·3	6·22	0·26	34·4	1·6
Dec. 7	54·96	0·24	55·1	0·5	49·77	0·27	8·5	0·1	6·48	0·23	32·8	1·6
17	55·20		54·6		50·04		8·4		6·71		31·2	
		0·20		0·5		0·23		0·1		0·20		1·5
27	55·40	0·14	54·1	0·3	50·27	0·18	8·5	0·3	6·91	0·16	29·7	1·4
37	55·54		53·8		50·45		8·8		7·07		28·3	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	β Geminorum. (*Pollux*)				6 Cancri.				15 Argûs.			
	R.A.		Dec. *North.*		R.A.		Dec. *North.*		R.A.		Dec. *South.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	7 36		28 21		7 55		28 10		8 1		23 54	
Jan. 1	51·09	0·16	26·8	0·1	1·37	0·18	46·2	0·0	39·67	0·15	20·3	2·9
11	51·25	0·11	26·9	0·3	1·55	0·13	46·2	0·2	39·82	0·09	23·2	2·9
21	51·36	0·05	27·2	0·4	1·68	0·06	46·4	0·4	39·91	0·04	26·1	2·7
31	51·41		27·6		1·74		46·8		39·95		28·8	
		0·01		0·5		0·01		0·5		0·02		2·4
Feb. 10	51·40	0·06	28·1	0·6	1·75	0·04	47·3	0·6	39·93	0·06	31·2	2·1
20	51·34	0·11	28·7	0·5	1·71	0·09	47·9	0·6	39·87	0·10	33·3	1·8
Mar. 2	51·23	0·14	29·2	0·6	1·62	0·12	48·5	0·6	39·77	0·14	35·1	1·4
12	51·09		29·8		1·50		49·1		39·63		36·5	
		0·17		0·4		0·16		0·5		0·17		1·1
22	50·92	0·18	30·2	0·4	1·34	0·18	49·6	0·5	39·46	0·18	37·6	0·7
Apr. 1	50·74	0·19	30·6	0·3	1·16	0·18	50·1	0·4	39·28	0·19	38·3	0·4
11	50·55	0·17	30·9	0·2	0·98	0·17	50·5	0·2	39·09	0·18	38·7	0·0
21	50·38		31·0		0·81		50·7		38·91		38·7	
		0·16		0·0		0·16		0·1		0·17		0·4
May 1	50·22	0·13	31·0	0·1	0·65	0·14	50·8	0·0	38·74	0·16	38·3	0·7
11	50·09	0·10	30·9	0·3	0·51	0·11	50·8	0·2	38·58	0·14	37·6	1·0
21	49·99	0·07	30·6	0·3	0·40	0·08	50·6	0·3	38·44	0·10	36·6	1·3
31	49·92		30·3		0·32		50·3		38·34		35·3	
		0·03		0·5		0·04		0·4		0·08		1·6
June 10	49·89	0·02	29·8	0·5	0·28	0·00	49·9	0·5	38·26	0·04	33·7	1·8
20	49·91	0·05	29·3	0·5	0·28	0·03	49·4	0·5	38·22	0·00	31·9	2·0
30	49·96	0·09	28·8	0·6	0·31	0·08	48·9	0·6	38·22	0·03	29·9	2·0
July 10	50·05		28·2		0·39		48·3		38·25		27·9	
		0·14		0·7		0·12		0·8		0·06		2·0
20	50·19	0·17	27·5	0·7	0·51	0·14	47·5	0·7	{38·32 / 38·38}	0·10	{25·9 / 25·7}	2·0
30	50·36	0·20	26·8	0·7	0·65	0·18	46·8	0·8	38·42	0·13	23·7	2·0
Aug. 9	50·56	0·22	26·1	0·8	0·83	0·21	46·0	0·9	38·55	0·17	21·7	1·9
19	50·78		25·3		1·04		45·1		38·72		19·8	
		0·25		0·8		0·24		0·9		0·19		1·6
29	51·03	0·27	24·5	0·8	1·28	0·26	44·2	0·9	38·91	0·22	18·2	1·2
Sept. 8	51·30	0·30	23·7	0·9	1·54	0·28	43·3	1·0	39·13	0·25	17·0	0·8
18	51·60	0·31	22·8	0·9	1·82	0·31	42·3	1·1	39·38	0·28	16·2	0·4
28	51·91		21·9		2·13		41·2		39·66		15·8	
		0·33		1·0		0·32		1·1		0·29		0·1
Oct. 8	52·24	0·34	20·9	0·9	2·45	0·33	40·1	1·1	39·95	0·31	15·9	0·6
18	52·58	0·34	20·0	0·9	2·78	0·35	39·0	1·1	40·26	0·31	16·5	1·1
28	52·92	0·35	19·1	0·9	3·13	0·35	37·9	1·0	40·57	0·32	17·6	1·5
Nov. 7	53·27		18·2		3·48		36·9		40·89		19·1	
		0·34		0·8		0·34		1·0		0·32		2·0
17	53·61	0·33	17·4	0·7	3·82	0·33	35·9	0·8	41·21	0·30	21·1	2·3
27	53·94	0·30	16·7	0·5	4·15	0·32	35·1	0·7	41·51	0·28	23·4	2·6
Dec. 7	54·24	0·27	16·2	0·4	4·47	0·29	34·4	0·5	41·79	0·25	26·0	2·8
17	54·51		15·8		4·76		33·9		42·04		28·8	
		0·23		0·2		0·25		0·3		0·21		2·9
27	54·74	0·18	15·6	0·0	5·01	0·20	33·6	0·1	42·25	0·17	31·7	3·0
37	54·92		15·6		5·21		33·5		42·42		34·7	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	η Cancri.				ε Hydræ.				ι Ursæ Majoris.			
	R.A.		Dec. *North.*		R.A.		Dec. *North.*		R.A.		Dec. *North.*	
	h m		° ′		h m		° ′		h m		° ′	
	8 24		20 54		8 39		6 55		8 49		48 34	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	42·43	0·20	31·7	0·5	27·03	0·20	30·3	1·5	43·63	0·29	52·9	0·9
11	42·63	0·15	31·2	0·4	27·23	0·15	28·8	1·2	43·92	0·22	53·8	1·2
21	42·78	0·09	30·8	0·1	27·38	0·10	27·6	1·1	44·14	0·15	55·0	1·5
31	42·87		30·7		27·48		26·5		44·29		56·5	
		0·04		0·1		0·05		0·8		0·08		1·6
Feb. 10	42·91		30·8		27·53		25·7		44·37		58·1	
20	42·90	0·01	31·0	0·2	27·53	0·00	25·1	0·6	44·37	0·00	59·8	1·7
Mar. 2	42·84	0·06	31·3	0·3	27·48	0·05	24·7	0·4	44·30	0·07	61·5	1·7
12	42·75	0·09	31·7	0·4	27·40	0·08	24·5	0·2	44·18	0·12	63·2	1·7
		0·13		0·4		0·11		0·1		0·17		1·5
22	42·62		32·1		27·29		24·4		44·01		64·7	
Apr. 1	42·47	0·15	32·6	0·5	27·16	0·13	24·4	0·0	43·80	0·21	66·0	1·3
11	42·31	0·16	33·0	0·4	27·01	0·15	24·6	0·2	43·56	0·24	67·0	1·0
21	42·15	0·16	33·3	0·3	26·86	0·15	24·8	0·2	43·32	0·24	67·7	0·7
				0·3		0·14		0·4		0·24		0·4
May 1	41·99		33·6		26·72		25·2		43·08		68·1	
11	41·85	0·14	33·8	0·2	26·59	0·13	25·5	0·3	42·85	0·23	68·1	0·0
21	41·74	0·11	34·0	0·2	26·48	0·11	26·0	0·5	42·65	0·20	67·7	0·4
31	41·65	0·09	34·0	0·0	26·39	0·09	26·4	0·4	42·48	0·17	67·1	0·6
		0·06		0·0		0·07		0·5		0·13		1·0
June 10	41·59	0·02	34·0	0·1	26·32	0·03	26·9	0·5	42·35	0·09	66·1	1·3
20	41·57	0·01	33·9	0·1	26·29	0·01	27·4	0·6	42·26	0·04	64·8	1·4
30	41·58	0·04	33·8	0·3	26·28	0·03	28·0	0·5	42·22	0·00	63·4	1·7
July 10	41·62	0·07	33·5	0·3	26·31	0·05	28·5	0·4	42·22	0·04	61·7	1·9
20	41·69		33·2		26·36		28·9		42·26		59·8	
30	41·81	0·12	32·8	0·4	{26·44 / 26·45}	0·08	{29·4 / 29·4}	0·5	42·35	0·09	57·8	2·0
Aug. 9	41·95	0·14	32·3	0·5	26·56	0·11	29·7	0·3	42·51	0·16	55·5	2·3
19	42·12	0·17	31·7	0·6	26·70	0·14	29·8	0·1	42·69	0·18	53·3	2·2
		0·19		0·7		0·17		0·0		0·23		2·2
29	42·31		31·0		26·87		29·8		42·92		51·1	
Sept. 8	42·53	0·22	30·2	0·8	27·07	0·20	29·7	0·1	43·18	0·26	48·9	2·2
18	42·78	0·25	29·3	0·9	27·29	0·22	29·3	0·4	43·48	0·30	46·8	2·1
28	43·05	0·27	28·2	1·1	27·53	0·24	28·7	0·6	43·82	0·34	44·7	2·1
		0·29		1·1		0·27		0·8		0·38		2·0
Oct. 8	43·34		27·1		27·80		27·9		44·20		42·7	
18	43·65	0·31	25·8	1·3	28·08	0·28	26·8	1·1	44·60	0·40	40·9	1·8
28	43·97	0·32	24·5	1·3	28·38	0·30	25·5	1·3	45·03	0·43	39·3	1·6
Nov. 7	44·30	0·33	23·2	1·3	28·70	0·32	24·0	1·5	45·47	0·44	38·0	1·3
		0·34		1·4		0·32		1·6		0·45		1·1
17	44·64		21·8		29·02		22·4		45·92		36·9	
27	44·97	0·33	20·5	1·3	29·33	0·31	20·6	1·8	46·36	0·44	36·1	0·8
Dec. 7	45·29	0·32	19·3	1·2	29·63	0·30	18·9	1·7	46·79	0·43	35·8	0·3
17	45·58	0·29	18·3	1·0	29·92	0·29	17·2	1·7	47·20	0·41	35·8	0·0
		0·26		0·9		0·26		1·7		0·37		0·3
27	45·84		17·4		30·18		15·5		47·57		36·1	
37	46·07	0·23	16·8	0·6	30·39	0·21	14·0	1·5	47·89	0·32	36·9	0·8

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	83 Cancri.				ι Argûs.				α Hydræ.			
	R. A.		Dec. *North.*		R. A.		Dec. *South.*		R. A.		Dec. *South.*	
	h m		° ′		h m		° ′		h m		° ′	
	9 11		18 17		9 13		58 41		9 20		8 3	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	15·32	0·24	24·3	0·9	24·47	0·27	25·8	3·7	47·35	0·23	31·9	2·3
11	15·56	0·19	23·4	0·7	24·74	0·19	29·5	3·8	47·58	0·18	34·2	2·2
21	15·75	0·14	22·7	0·4	24·93	0·11	33·3	3·9	47·76	0·13	36·4	2·0
31	15·89		22·3		25·04		37·2		47·89		38·4	
		0·09		0·2		0·02		3·8		0·08		1·8
Feb. 10	15·98		22·1		25·06		41·0		47·97		40·2	
20	16·02	0·04	22·2	0·1	25·01	0·05	44·6	3·6	48·01	0·04	41·7	1·5
Mar. 2	16·00	0·02	22·4	0·2	24·88	0·13	48·0	3·4	48·00	0·01	43·0	1·3
12	15·94	0·06	22·7	0·3	24·68	0·20	51·1	3·1	47·95	0·05	44·1	1·1
		0·09		0·5		0·25		2·7		0·09		0·8
22	15·85		23·2		24·43		53·8		47·86		44·9	
Apr. 1	15·73	0·12	23·7	0·5	24·14	0·29	56·1	2·3	47·75	0·11	45·5	0·6
11	15·59	0·14	24·2	0·5	23·82	0·32	57·9	1·8	47·62	0·13	45·8	0·3
21	15·45	0·14	24·7	0·5	23·47	0·35	59·3	1·4	47·48	0·14	45·9	0·1
		0·15				0·36		0·8		0·14		0·1
May 1	15·30		25·2		23·11		60·1		47·34		45·8	
11	15·16	0·14	25·6	0·4	22·76	0·35	60·4	0·3	47·21	0·13	45·4	0·4
21	15·04	0·12	25·9	0·3	22·42	0·34	60·2	0·2	47·09	0·12	44·9	0·5
31	14·93	0·11	26·2	0·3	22·10	0·32	59·5	0·7	46·98	0·11	44·3	0·6
		0·08		0·1		0·29		1·1		0·09		0·8
June 10	14·85		26·3		21·81		58·4		46·89		43·5	
20	14·79	0·06	26·4	0·1	21·55	0·26	56·8	1·6	46·82	0·07	42·5	1·0
30	14·76	0·03	26·4	0·0	21·33	0·22	54·7	2·1	46·78	0·04	41·5	1·0
July 10	14·76	0·00	26·3	0·1	21·17	0·16	52·3	2·4	46·76	0·02	40·4	1·1
		0·03		0·2		0·11		2·6		0·01		1·2
20	14·79		26·1		21·06		49·7		46·77		39·2	
30	14·85	0·06	25·8	0·3	21·01	0·05	46·9	2·8	46·81	0·04	38·1	1·1
Aug. 9	14·94	0·09	25·3	0·5	21·02	0·01	43·7	3·2	{46·87 / 46·87}	0·06	{38·0 / 38·0}	1·1
19	15·06	0·12	24·7	0·6	21·10	0·08	40·7	3·0	46·96	0·09	36·0	0·9
		0·15		0·7		0·15		2·8		0·13		0·8
29	15·21		24·0		21·25		37·9		47·09		35·2	
Sept. 8	15·38	0·17	23·1	0·9	21·47	0·22	35·3	2·6	47·25	0·16	34·7	0·5
18	15·58	0·20	22·1	1·0	21·75	0·28	33·0	2·3	47·43	0·18	34·4	0·3
28	15·81	0·23	20·9	1·2	22·09	0·34	31·2	1·8	47·64	0·21	34·4	0·0
		0·26		1·3		0·40		1·3		0·24		0·3
Oct. 8	16·07		19·6		22·49		29·9		47·88		34·7	
18	16·36	0·29	18·2	1·4	22·93	0·44	29·2	0·7	48·15	0·27	35·4	0·7
28	16·66	0·30	16·6	1·6	23·41	0·48	29·1	0·1	48·44	0·29	36·5	1·1
Nov. 7	16·98	0·32	14·9	1·7	23·91	0·50	29·7	0·6	48·74	0·30	37·9	1·4
		0·34		1·6		0·51		1·2		0·32		1·7
17	17·32		13·3		24·42		30·9		49·06		39·6	
27	17·66	0·34	11·7	1·6	24·91	0·49	32·7	1·8	49·38	0·32	41·6	2·0
Dec. 7	17·99	0·33	10·1	1·6	25·38	0·47	35·1	2·4	49·70	0·32	43·7	2·1
17	18·30	0·31	8·7	1·4	25·81	0·43	38·0	2·9	50·00	0·30	46·0	2·3
		0·29		1·3		0·38		3·3		0·28		2·4
27	18·59		7·4		26·19		41·3		50·28		48·4	
37	18·85	0·26	6·4	1·0	26·50	0·31	44·8	3·5	50·52	0·24	50·7	2·3

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	θ Ursæ Majoris.				ε Leonis.				π Leonis.			
	R.A.		Dec. *North.*		R.A.		Dec. *North.*		R.A.		Dec. *North.*	
	h m		° ′		h m		° ′		h m		° ′	
	9 23		52 17		9 37		24 24		9 52		8 42	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	35·60		75·7		59·58		33·6		53·92		26·1	
		0·35		0·8		0·26		0·7		0·26		1·6
11	35·95		76·5		59·84		32·9		54·18		24·5	
		0·28		1·2		0·23		0·4		0·22		1·4
21	36·23		77·7		60·07		32·5		54·40		23·1	
		0·20		1·5		0·18		0·2		0·17		1·1
31	36·43		79·2		60·25		32·3		54·57		22·0	
		0·13		1·8		0·12		0·2		0·13		0·8
Feb. 10	36·56		81·0		60·37		32·5		54·70		21·2	
		0·05		1·9		0·06		0·4		0·07		0·6
20	36·61		82·9		60·43		32·9		54·77		20·6	
		0·02		2·0		0·01		0·6		0·03		0·4
Mar. 2	36·59		84·9		60·44		33·5		54·80		20·2	
		0·09		2·0		0·03		0·7		0·02		0·1
12	36·50		86·9		60·41		34·2		54·78		20·1	
		0·16		1·8		0·08		0·8		0·05		0·0
22	36·34		88·7		60·33		35·0		54·73		20·1	
		0·21		1·6		0·11		0·8		0·09		0·2
Apr. 1	36·13		90·3		60·22		35·8		54·64		20·3	
		0·23		1·4		0·13		0·8		0·11		0·3
11	35·90		91·7		60·09		36·6		54·53		20·6	
		0·25		1·1		0·14		0·8		0·12		0·3
21	35·65		92·8		59·95		37·4		54·41		20·9	
		0·27		0·7		0·15		0·6		0·12		0·5
May 1	35·38		93·5		59·80		38·0		54·29		21·4	
		0·26		0·2		0·14		0·6		0·13		0·5
11	35·12		93·7		59·66		38·6		54·16		21·9	
		0·24		0·1		0·14		0·4		0·12		0·4
21	34·88		93·6		59·52		39·0		54·04		22·3	
		0·21		0·4		0·12		0·2		0·11		0·5
31	34·67		93·2		59·40		39·2		53·93		22·8	
		0·18		0·9		0·10		0·1		0·09		0·5
June 10	34·49		92·3		59·30		39·3		53·84		23·3	
		0·15		1·2		0·08		0·1		0·07		0·5
20	34·34		91·1		59·22		39·2		53·77		23·8	
		0·10		1·5		0·05		0·2		0·06		0·3
30	34·24		89·6		59·17		39·0		53·71		24·1	
		0·06		1·7		0·02		0·4		0·03		0·4
July 10	34·18		87·9		59·15		38·6		53·68		24·5	
		0·01		2·0		0·00		0·5		0·01		0·3
20	34·17		85·9		59·15		38·1		53·67		24·8	
		0·04		2·2		0·03		0·7		0·01		0·1
30	34·21		83·7		59·18		37·4		53·68		24·9	
		0·09		2·3		0·06		0·8		0·04		0·1
Aug. 9	34·30		81·4		59·24		36·6		53·72		25·0	
		0·14		2·7		0·10		1·0		0·08		0·0
19	34·44		78·7		59·34		35·6		53·80		25·0	
		0·19		2·6		0·12		1·2		0·10		0·3
29	34·63		76·1		59·46		34·4		53·90		24·7	
		0·23		2·5		0·16		1·3		0·13		0·4
Sept. 8	34·86		73·6		59·62		33·1		54·03		24·3	
		0·27		2·6		0·18		1·4		0·15		0·6
18	35·13		71·0		59·80		31·7		54·18		23·7	
		0·32		2·5		0·22		1·6		0·19		0·9
28	35·45		68·5		60·02		30·1		54·37		22·8	
		0·36		2·4		0·25		1·6		0·22		1·1
Oct. 8	35·81		66·1		60·27		28·5		54·59		21·7	
		0·39		2·2		0·27		1·8		0·25		1·3
18	36·20		63·9		60·54		26·7		54·84		20·4	
		0·43		2·0		0·31		1·8		0·28		1·5
28	36·63		61·9		60·85		24·9		55·12		18·9	
		0·46		1·8		0·33		1·9		0·30		1·7
Nov. 7	37·09		60·1		61·18		23·0		55·42		17·2	
		0·47		1·4		0·34		1·8		0·32		1·8
17	37·56		58·7		61·52		21·2		55·74		15·4	
		0·48		1·1		0·35		1·6		0·33		1·9
27	38·04		57·6		61·87		19·6		56·07		13·5	
		0·47		0·7		0·35		1·6		0·33		2·0
Dec. 7	38·51		56·9		62·22		18·0		56·40		11·5	
		0·45		0·2		0·33		1·4		0·32		1·9
17	38·96		56·7		62·55		16·6		56·72		9·6	
		0·42		0·2		0·32		1·1		0·30		1·8
27	39·38		56·9		62·87		15·5		57·02		7·8	
		0·38		0·6		0·29		0·9		0·27		1·7
37	39·76		57·5		63·16		14·6		57·29		6·1	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Leonis. (*Regulus*) R. A.		Dec. *North.*		γ¹ Leonis. R. A.		Dec. *North.*		ρ Leonis. R. A.		Dec. *North.*	
	h m		° ′		h m		° ′		h m		° ′	
	10 0		12 38		10 12		20 32		10 25		10 0	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	59·95	0·27	32·9	1·4	20·31	0·28	23·7	1·1	31·24	0·28	65·1	1·7
11	60·22	0·23	31·5	1·2	20·59	0·25	22·6	0·8	31·52	0·25	63·4	1·3
21	60·45	0·18	30·3	0·9	20·84	0·20	21·8	0·5	31·77	0·20	62·1	1·1
31	60·63		29·4		21·04		21·3		31·97		61·0	
		0·14		0·6		0·16		0·1		0·16		0·9
Feb. 10	60·77	0·08	28·8	0·4	21·20	0·10	21·2	0·1	32·13	0·11	60·1	0·6
20	60·85	0·03	28·4	0·1	21·30	0·04	21·3	0·3	32·24	0·06	59·5	0·3
Mar. 2	60·88	0·01	28·3	0·1	21·34	0·00	21·6	0·5	32·30	0·01	59·2	0·1
12	60·87		28·4		21·34		22·1		32·31		59·1	
		0·04		0·2		0·04		0·7		0·02		0·2
22	60·83		28·6		21·30		22·8		32·29		59·3	
Apr. 1	60·75	0·08	29·0	0·4	21·23	0·07	23·6	0·8	32·23	0·06	59·6	0·3
11	60·64	0·11	29·5	0·5	21·13	0·10	24·4	0·8	32·15	0·08	59·9	0·3
21	60·52	0·12	30·0	0·5	21·01	0·12	25·2	0·8	32·04	0·11	60·4	0·5
		0·12		0·6		0·13		0·8		0·12		0·6
May 1	60·40	0·13	30·6	0·5	20·88	0·13	26·0	0·6	31·92	0·11	61·0	0·5
11	60·27	0·12	31·1	0·5	20·75	0·13	26·6	0·6	31·81	0·11	61·5	0·6
21	60·15	0·11	31·6	0·5	20·62	0·13	27·2	0·4	31·70	0·11	62·1	0·5
31	60·04		32·1		20·50		27·6		31·59		62·6	
		0·09		0·4		0·10		0·3		0·10		0·5
June 10	59·95	0·09	32·5	0·3	20·40	0·09	27·9	0·2	31·49	0·09	63·1	0·5
20	59·86	0·06	32·8	0·3	20·31	0·07	28·1	0·0	31·40	0·07	63·6	0·3
30	59·80	0·04	33·1	0·2	20·24	0·05	28·1	0·1	31·33	0·06	63·9	0·3
July 10	59·76		33·3		20·19		28·0		31·27		64·2	
		0·02		0·1		0·03		0·3		0·03		0·2
20	59·74	0·01	33·4	0·1	20·16	0·00	27·7	0·5	31·24	0·01	64·4	0·1
30	59·75	0·04	33·3	0·1	20·16	0·03	27·2	0·6	31·23	0·01	64·5	0·0
Aug. 9	59·79	0·06	33·2	0·3	20·19	0·05	26·6	0·8	31·24	0·03	64·5	0·2
19	59·85		32·9		20·24		25·8		31·27		64·3	
		0·11		0·5		0·09		1·0		0·07		0·3
29	59·96		32·4		20·33		24·8		31·34		64·0	
Sept. 8	60·07	0·11	31·7	0·7	20·44	0·11	23·6	1·2	31·44	0·10	63·4	0·6
18	60·22	0·15	30·8	0·9	20·59	0·15	22·3	1·3	31·57	0·13	62·7	0·7
28	60·40	0·18	29·8	1·0	20·77	0·18	20·8	1·5	31·73	0·16	61·7	1·0
		0·22		1·3		0·21		1·7		0·19		1·2
Oct. 8	60·62	0·24	28·5	1·5	20·98	0·25	19·1	1·8	31·92	0·23	60·5	1·4
18	60·86	0·28	27·0	1·6	21·23	0·27	17·3	1·9	32·15	0·25	59·1	1·7
28	61·14	0·30	25·4	1·8	21·50	0·31	15·4	2·0	32·40	0·29	57·4	1·8
Nov. 7	61·44		23·6		21·81		13·4		32·69		55·6	
		0·32		1·9		0·33		1·9		0·31		1·9
17	61·76	0·33	21·7	1·9	22·14	0·34	11·5	2·0	33·00	0·33	53·7	2·0
27	62·09	0·33	19·8	1·9	22·48	0·34	9·5	1·9	33·33	0·33	51·7	2·0
Dec. 7	62·42	0·33	17·9	1·9	22·82	0·34	7·6	1·7	33·66	0·33	49·7	2·0
17	62·75		16·0		23·16		5·9		33·99		47·7	
		0·31		1·7		0·33		1·4		0·32		1·9
27	63·06	0·28	14·3	1·5	23·49	0·30	4·5	1·0	34·31	0·30	45·8	1·7
37	63·34		12·8		23·79		3·5		34·61		44·1	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	η Argûs.				l Leonis.				α Ursæ Majoris.			
	R.A.		Dec. *South.*		R.A.		Dec. *North.*		R.A.		Dec. *North.*	
	h m		° ′		h m		° ′		h m		° ′	
	10 39		58 57		10 41		11 16		10 55		62 29	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	42·36		4·9		58·65		37·1		10·22		39·0	
		0·42		3·2		0·29		1·6		0·54		0·4
11	42·78		8·1		58·94		35·5		10·76		39·4	
		0·36		3·5		0·26		1·4		0·48		0·9
21	43·14		11·6		59·20		34·1		11·24		40·3	
		0·28		3·6		0·22		1·1		0·41		1·4
31	43·42		15·2		59·42		33·0		11·65		41·7	
		0·20		3·8		0·17		0·8		0·32		1·9
Feb. 10	43·62		19·0		59·59		32·2		11·97		43·6	
		0·13		3·8		0·12		0·5		0·23		2·2
20	43·75		22·8		59·71		31·7		12·20		45·8	
		0·06		3·7		0·08		0·2		0·13		2·4
Mar. 2	43·81		26·5		59·79		31·5		12·33		48·2	
		0·02		3·5		0·03		0·0		0·04		2·6
12	43·79		30·0		59·82		31·5		12·37		50·8	
		0·09		3·3		0·01		0·2		0·06		2·6
22	43·70		33·3		59·81		31·7		12·31		53·4	
		0·15		3·0		0·04		0·3		0·14		2·5
Apr. 1	43·55		36·3		59·77		32·0		12·17		55·9	
		0·19		2·7		0·07		0·5		0·21		2·3
11	43·36		39·0		59·70		32·5		11·96		58·2	
		0·23		2·3		0·09		0·6		0·26		2·1
21	43·13		41·3		59·61		33·1		11·70		60·3	
		0·27		1·8		0·11		0·6		0·30		1·7
May 1	42·86		43·1		59·50		33·7		11·40		62·0	
		0·29		1·4		0·11		0·6		0·33		1·3
11	42·57		44·5		59·39		34·3		11·07		63·3	
		0·30		0·8		0·12		0·6		0·35		0·9
21	42·27		45·3		59·27		34·9		10·72		64·2	
		0·31		0·4		0·11		0·6		0·36		0·3
31	41·96		45·7		59·16		35·5		10·36		64·5	
		0·30		0·1		0·10		0·5		0·34		0·1
June 10	41·66		45·6		59·06		36·0		10·02		64·4	
		0·30		0·7		0·09		0·5		0·32		0·6
20	41·36		44·9		58·97		36·5		9·70		63·8	
		0·28		1·1		0·08		0·3		0·29		1·1
30	41·08		43·8		58·89		36·8		9·41		62·7	
		0·25		1·5		0·07		0·3		0·25		1·5
July 10	40·83		42·3		58·82		37·1		9·16		61·2	
		0·21		2·0		0·04		0·2		0·21		1·9
20	40·62		40·3		58·78		37·3		8·95		59·3	
		0·17		2·3		0·03		0·0		0·16		2·3
30	40·45		38·0		58·75		37·3		8·79		57·0	
		0·13		2·5		0·00		0·1		0·11		2·6
Aug. 9	40·32		35·5		58·75		37·2		8·68		54·4	
		0·07		2·7		0·02		0·2		0·06		2·8
19	40·25		32·8		58·77		37·0		8·62		51·6	
		0·00		2·8		0·05		0·5		0·01		3·1
29	40·25		30·0		58·82		36·5		8·63		48·5	
		0·08		3·0		0·08		0·7		0·09		3·5
Sept. 8	40·33		27·0		58·90		35·8		8·72		45·0	
		0·14		2·6		0·11		0·8		0·14		3·4
18	40·47		24·4		59·01		35·0		8·86		41·6	
		0·22		2·3		0·14		1·1		0·21		3·3
28	40·69		22·1		59·15		33·9		9·07		38·3	
		0·29		2·0		0·18		1·3		0·29		3·4
Oct. 8	40·98		20·1		59·33		32·6		9·36		34·9	
		0·36		1·6		0·21		1·5		0·35		3·2
18	41·34		18·5		59·54		31·1		9·71		31·7	
		0·42		1·1		0·25		1·7		0·41		3·0
28	41·76		17·4		59·79		29·4		10·12		28·7	
		0·47		0·5		0·28		1·8		0·47		2·8
Nov. 7	42·23		16·9		60·07		27·6		10·59		25·9	
		0·50		0·2		0·31		2·0		0·52		2·5
17	42·73		17·1		60·38		25·6		11·11		23·4	
		0·53		0·8		0·32		2·1		0·56		2·0
27	43·26		17·9		60·70		23·5		11·67		21·4	
		0·54		1·4		0·34		2·0		0·59		1·6
Dec. 7	43·80		19·3		61·04		21·5		12·26		19·8	
		0·52		2·0		0·33		2·0		0·60		1·0
17	44·32		21·3		61·37		19·5		12·86		18·8	
		0·49		2·5		0·32		1·9		0·58		0·5
27	44·81		23·8		61·69		17·6		13·44		18·3	
		0·44		2·9		0·31		1·8		0·56		0·1
37	45·25		26·7		62·00		15·8		14·00		18·4	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	χ Leonis.				ϑ Leonis.				ϑ Hydræ et Crateris.			
	R. A.		Dec. *North.*		R. A.		Dec. *North.*		R. A.		Dec. *South.*	
	h m		° ′		h m		° ′		h m		° ′	
	10 57		8 4		11 6		21 16		11 12		14 1	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	52·37	0·30	62·0	1·8	44·41	0·32	50·5	1·3	25·02	0·31	39·9	2·5
11	52·67	0·27	60·2	1·6	44·73	0·29	49·2	1·0	25·33	0·27	42·4	2·4
21	52·94	0·23	58·6	1·3	45·02	0·25	48·2	0·7	25·60	0·24	44·8	2·3
31	53·17		57·3		45·27		47·5		25·84		47·1	
		0·18		1·0		0·20		0·3		0·19		2·2
Feb. 10	53·35	0·14	56·3	0·7	45·47	0·15	47·2	0·0	26·03	0·15	49·3	2·0
20	53·49	0·09	55·6	0·5	45·62	0·11	47·2	0·4	26·18	0·11	51·3	1·8
Mar. 2	53·58	0·05	55·1	0·2	45·73	0·06	47·6	0·6	26·29	0·06	53·1	1·6
12	53·63		54·9		45·79		48·2		26·35		54·7	
		0·01		0·0		0·01		0·8		0·02		1·3
22	53·64	0·03	54·9	0·2	45·80	0·02	49·0	0·9	26·37	0·02	56·0	1·0
Apr. 1	53·61	0·06	55·1	0·3	45·78	0·06	49·9	1·0	26·35	0·04	57·0	0·8
11	53·55	0·08	55·4	0·5	45·72	0·08	50·9	1·1	26·31	0·07	57·8	0·6
21	53·47		55·9		45·64		52·0		26·24		58·4	
		0·09		0·6		0·10		1·0		0·08		0·3
May 1	53·38	0·11	56·5	0·5	45·54	0·11	53·0	0·9	26·16	0·10	58·7	0·1
11	53·27	0·11	57·0	0·6	45·43	0·12	53·9	0·9	26·06	0·10	58·8	0·1
21	53·16	0·11	57·6	0·6	45·31	0·12	54·8	0·7	25·96	0·11	58·7	0·3
31	53·05		58·2		45·19		55·5		25·85		58·4	
		0·10		0·6		0·12		0·5		0·11		0·5
June 10	52·95	0·09	58·8	0·5	45·07	0·10	56·0	0·4	25·74	0·10	57·9	0·6
20	52·86	0·08	59·3	0·5	44·97	0·10	56·4	0·2	25·64	0·10	57·3	0·8
30	52·78	0·07	59·8	0·4	44·87	0·09	56·6	0·1	25·54	0·08	56·5	1·0
July 10	52·71		60·2		44·78		56·5		25·46		55·5	
		0·06		0·3		0·06		0·2		0·07		1·0
20	52·65	0·04	60·5	0·2	44·72	0·05	56·3	0·4	25·39	0·06	54·5	1·1
30	52·61	0·02	60·7	0·0	44·67	0·03	55·9	0·6	25·33	0·04	53·4	1·0
Aug. 9	52·59	0·00	60·7	0·1	44·64	0·01	55·3	0·8	25·29	0·02	52·4	1·1
19	52·59		60·6		44·63		54·5		25·27		51·3	
		0·03		0·2		0·03		1·0		0·01		1·0
29	52·62		60·4		44·66		53·5		25·28		50·3	
Sept. 8	52·69	0·07	59·9	0·5	44·71	0·05	52·2	1·3	25·32	0·04	49·5	0·8
18	52·78	0·09	59·2	0·7	44·80	0·09	50·7	1·5	25·41	0·09	48·7	0·8
28	52·91	0·13	58·3	0·9	44·92	0·12	49·0	1·7	25·52	0·11	48·3	0·4
		0·16		1·1		0·16		1·8		0·15		0·1
Oct. 8	53·07		57·2		45·08		47·2		25·67		48·2	
18	53·27	0·20	55·8	1·4	45·28	0·20	45·2	2·0	25·87	0·20	48·5	0·3
28	53·50	0·23	54·2	1·6	45·52	0·24	43·0	2·2	26·10	0·23	49·1	0·6
Nov. 7	53·77	0·27	52·4	1·8	45·79	0·27	40·8	2·2	26·36	0·26	50·0	0·9
		0·30		1·9		0·30		2·3		0·30		1·3
17	54·07		50·5		46·09		38·5		26·66		51·3	
27	54·38	0·31	48·4	2·1	46·42	0·33	36·3	2·2	26·98	0·32	52·9	1·6
Dec. 7	54·71	0·33	46·3	2·1	46·76	0·34	34·2	2·1	27·31	0·33	54·8	1·9
17	55·04	0·33	44·2	2·1	47·11	0·35	32·2	2·0	27·65	0·34	57·0	2·2
				2·0		0·35		1·7		0·33		2·3
27	55·37		42·2		47·46		30·5		27·98		59·3	
37	55·68	0·31	40·3	1·9	47·79	0·33	28·9	1·6	28·30	0·32	61·7	2·4

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	υ Leonis.				β Leonis.				γ Ursæ Majoris.			
	R. A.		Dec. *South.*		R. A.		Dec. *North.*		R. A.		Dec. *North.*	
	h m		° ′		h m		° ′		h m		° ′	
	11 29		0 3		11 41		15 20		11 46		54 27	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	51·37	0·31	31·2	2·1	59·44	0·32	43·2	1·7	32·11	0·47	39·7	0·6
11	51·68	0·29	33·3	1·9	59·76	0·30	41·5	1·4	32·58	0·44	39·1	0·1
21	51·97	0·25	35·2	1·8	60·06	0·27	40·1	1·1	33·02	0·40	39·2	0·6
31	52·22		37·0		60·33		39·0		33·42		39·8	
		0·21		1·5		0·23		0·8		0·34		1·8
Feb. 10	52·43	0·16	38·5	1·2	60·56	0·18	38·2	0·4	33·76	0·27	41·0	1·6
20	52·59	0·13	39·7	1·0	60·74	0·14	37·8	0·0	34·03	0·20	42·6	2·0
Mar. 2	52·72	0·08	40·7	0·7	60·88	0·09	37·8	0·2	34·23	0·12	44·6	2·3
12	52·80		41·4		60·97		38·0		34·35		46·9	
		0·04		0·5		0·05		0·5		0·05		2·4
22	52·84	0·00	41·9	0·2	61·02	0·01	38·5	0·6	34·40	0·02	49·3	2·4
Apr. 1	52·84	0·03	42·1	0·0	61·03	0·02	39·1	0·8	34·38	0·08	51·7	2·5
11	52·81	0·05	42·1	0·1	61·01	0·05	39·9	0·9	34·30	0·13	54·2	2·4
21	52·76		42·0		60·96		40·8		34·17		56·6	
		0·07		0·2		0·07		1·0		0·18		2·1
May 1	52·69	0·08	41·8	0·4	60·89	0·08	41·8	0·9	33·99	0·21	58·7	1·8
11	52·61	0·09	41·4	0·5	60·81	0·10	42·7	0·9	33·78	0·23	60·5	1·4
21	52·52	0·10	40·9	0·5	60·71	0·11	43·6	0·8	33·55	0·25	61·9	1·0
31	52·42		40·4		60·60		44·4		33·30		62·9	
		0·10		0·6		0·10		0·7		0·25		0·6
June 10	52·32	0·10	39·8	0·6	60·50	0·11	45·1	0·6	33·05	0·25	63·5	0·2
20	52·22	0·09	39·2	0·6	60·39	0·10	45·7	0·4	32·80	0·25	63·7	0·3
30	52·13	0·08	38·6	0·6	60·29	0·10	46·1	0·3	32·55	0·23	63·4	0·7
July 10	52·05		38·0		60·19		46·4		32·32		62·7	
		0·07		0·6		0·08		0·1		0·20		1·2
20	51·98	0·06	37·4	0·5	60·11	0·07	46·5	0·1	32·12	0·18	61·5	1·6
30	51·92	0·05	36·9	0·5	60·04	0·06	46·4	0·2	31·94	0·15	59·9	1·9
Aug. 9	51·87	0·02	36·4	0·3	59·98	0·04	46·2	0·4	31·79	0·11	58·0	2·3
19	51·85		36·1		59·94		45·8		31·68		55·7	
		0·00		0·2		0·01		0·7		0·07		2·6
29	51·85	0·02	35·9	0·0	59·93	0·01	45·1	0·9	31·61	0·03	53·1	2·9
Sept. 8	51·87	0·07	35·9	0·1	59·94	0·04	44·2	1·2	31·58	0·03	50·2	3·0
18	51·94	0·09	36·0	0·5	59·98	0·09	43·0	1·3	{31·61	0·03	{47·2	3·0
28	52·03		36·5		60·07		41·7		{31·61	0·09	{44·2	3·2
		0·13		0·7		0·12		1·6	31·70		43·7	
Oct. 8	52·16	0·17	37·2	0·9	60·19	0·16	40·1	1·8	31·84	0·21	40·3	3·4
18	52·33	0·21	38·1	1·2	60·35	0·20	38·3	2·0	32·05	0·26	36·9	3·4
28	52·54	0·25	39·3	1·5	60·55	0·24	36·3	2·1	32·31	0·32	33·6	3·3
Nov. 7	52·79		40·8		60·79		34·2		32·63		30·4	3·2
		0·28		1·7		0·27		2·2		0·38		2·9
17	53·07	0·31	42·5	2·0	61·06	0·31	32·0	2·3	33·01	0·42	27·5	2·7
27	53·38	0·32	44·5	2·0	61·37	0·33	29·7	2·2	33·43	0·46	24·8	2·3
Dec. 7	53·70	0·33	46·5	2·2	61·70	0·33	27·5	2·2	33·89	0·48	22·5	1·8
17	54·03		48·7		62·03		25·3		34·37		20·7	
		0·33		2·2		0·34		2·1		0·49		1·3
27	54·36	0·32	50·9	2·1	62·37	0·33	23·2	1·8	34·86	0·49	19·4	0·9
37	54·68		53·0		62·70		21·4		35·35		18·5	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	ε Corvi.				β Chamæleontis.				η Virginis.			
	R. A.		Dec. *South.*		R. A.		Dec. *South.*		R. A.		Dec. *North.*	
	h m		° ′		h m		° ′		h m		° ′	
	12 3		21 50		12 10		78 32		12 12		0 5	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	0·01	0·34	47·9	2·4	17·00	1·19	12·9	1·8	48·85	0·32	73·7	2·1
11	0·35	0·31	50·3	2·5	18·19	1·10	14·7	2·4	49·17	0·31	71·6	1·9
21	0·66	0·28	52·8	2·5	19·29	0·98	17·1	2·9	49·48	0·28	69·7	1·8
31	0·94		55·3		20·27		20·0		49·76		67·9	
		0·25		2·4		0·85		3·3		0·24		1·5
Feb. 10	1·19	0·20	57·7	2·3	21·12	0·69	23·3	3·6	50·00	0·21	66·4	1·3
20	1·39	0·16	60·0	2·2	21·81	0·52	26·9	3·7	50·21	0·16	65·1	1·0
Mar. 2	1·55	0·12	62·2	2·0	22·33	0·36	30·6	3·8	50·37	0·12	64·1	0·7
12	1·67		64·2		22·69		34·4		50·49		63·4	
		0·07		1·8		0·19		3·8		0·09		0·4
22	1·74	0·04	66·0	1·5	22·88	0·02	38·2	3·8	50·58	0·05	63·0	0·3
Apr. 1	1·78	0·01	67·5	1·3	22·90	0·14	42·0	3·7	50·63	0·01	62·7	0·0
11	1·79	0·02	68·8	1·0	22·76	0·28	45·7	3·4	50·64	0·02	62·7	0·2
21	1·77		69·8		22·48		49·1		50·62		62·9	
		0·05		0·8		0·42		3·1		0·03		0·3
May 1	1·72	0·07	70·6	0·5	22·06	0·55	52·2	2·8	50·59	0·06	63·2	0·5
11	1·65	0·08	71·1	0·3	21·51	0·63	55·0	2·4	50·53	0·07	63·7	0·5
21	1·57	0·09	71·4	0·1	20·86	0·75	57·4	2·0	50·46	0·08	64·2	0·6
31	1·48		71·5		20·11		59·4		50·38		64·8	
		0·10		0·1		0·82		1·4		0·08		0·6
June 10	1·38	0·11	71·4	0·4	19·29	0·87	60·8	0·9	50·30	0·09	65·4	0·6
20	1·27	0·11	71·0	0·6	18·42	0·91	61·7	0·4	50·21	0·10	66·0	0·6
30	1·16	0·11	70·4	0·8	17·51	0·90	62·1	0·2	50·11	0·10	66·6	0·6
July 10	1·05		69·6		16·61		61·9		50·01		67·2	
		0·10		1·0		0·88		0·8		0·09		0·6
20	0·95	0·10	68·6	1·1	15·73	0·84	61·1	1·2	49·92	0·09	67·8	0·5
30	0·85	0·08	67·5	1·2	14·89	0·75	59·9	1·8	49·83	0·07	68·3	0·4
Aug. 9	0·77	0·07	66·3	1·2	14·14	0·63	58·1	2·2	49·76	0·06	68·7	0·3
19	0·70		65·1		13·51		55·9		49·70		69·0	
		0·04		1·3		0·50		2·5		0·04		0·2
29	0·66	0·01	63·8	1·2	13·01	0·33	53·4	2·8	49·66	0·02	69·2	0·0
Sept. 8	0·65	0·02	62·6	1·0	12·68	0·15	50·6	3·0	49·64	0·02	69·2	0·2
18	0·67	0·07	61·6	1·0	12·53	0·06	47·6	3·3	49·66	0·05	69·0	0·5
28	0·74		60·6		12·59		44·3		49·71		68·5	
		0·11		0·7		0·28		3·0		0·09		0·7
Oct. 8	0·85	0·15	59·9	0·3	12·87	0·48	41·3	2·8	49·80	0·13	67·8	0·9
18	1·00	0·20	59·6	0·0	13·35	0·68	38·5	2·4	49·93	0·18	66·9	1·1
28	1·20	0·24	59·6	0·4	14·03	0·85	36·1	2·0	50·11	0·21	65·8	1·5
Nov. 7	1·44		60·0		14·88		34·1		50·32		64·3	
		0·28		0·8		1·01		1·5		0·25		1·7
17	1·72	0·31	60·8	1·1	15·89	1·13	32·6	0·9	50·57	0·29	62·6	1·9
27	2·03	0·33	61·9	1·5	17·02	1·22	31·7	0·4	50·86	0·31	60·7	2·0
Dec. 7	2·36	0·35	63·4	1·8	18·24	1·25	31·3	0·3	51·17	0·33	58·7	2·2
17	2·71		65·2		19·49		31·6		51·50		56·5	
		0·36		2·1		1·26		1·0		0·33		2·2
27	3·07	0·35	67·3	2·3	20·75	1·23	32·6	1·6	51·83	0·33	54·3	2·1
37	3·42		69·6		21·98		34·2		52·16		52·2	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α^1 Crucis.				β Corvi.				γ^1 Virginis.			
	R. A.			Dec. *South.*				Dec. *South.*				Dec. *South.*
	h m	s		° ′	h m	s		° ′	h m	s		° ′
	12 18			62 19	12 27			22 37	12 34			0 41
	s	s		″ ″	s	s		″ ″	s	s		″ ″
Jan. 1	54·33			28·4	6·37			40·6	38·13			21·4
		0·58		2·1		0·35		2·2		0·34		2·1
11	54·91			30·5	6·72			42·8	38·47			23·5
		0·54		2·5		0·33		2·4		0·31		2·0
21	55·45			33·0	7·05			45·2	38·78			25·5
		0·49		2·9		0·30		2·4		0·29		1·7
31	55·94			35·9	7·35			47·6	39·07			27·2
		0·43		3·2		0·27		2·4		0·26		1·6
Feb. 10	56·37			39·1	7·62			50·0	39·33			28·8
		0·36		3·4		0·23		2·3		0·22		1·3
20	56·73			42·5	7·85			52·3	39·55			30·1
		0·28		3·5		0·18		2·1		0·18		1·1
Mar. 2	57·01			46·0	8·03			54·4	39·73			31·2
		0·21		3·5		0·15		2·0		0·15		0·7
12	57·22			49·5	8·18			56·4	39·88			31·9
		0·13		3·6		0·10		1·8		0·10		0·5
22	57·35			53·1	8·28			58·2	39·98			32·4
		0·06		3·4		0·07		1·6		0·07		0·3
Apr. 1	57·41			56·5	8·35			59·8	40·05			32·7
		0·00		3·2		0·03		1·3		0·04		0·0
11	57·41			59·7	8·38			61·1	40·09			32·7
		0·06		3·0		0·00		1·1		0·00		0·2
21	57·35			62·7	8·38			62·2	40·09			32·5
		0·12		2·7		0·02		0·9		0·02		0·3
May 1	57·23			65·4	8·36			63·1	40·07			32·2
		0·17		2·3		0·05		0·6		0·04		0·4
11	57·06			67·7	8·31			63·7	40·03			31·8
		0·22		2·0		0·06		0·4		0·05		0·5
21	56·84			69·7	8·25			64·1	39·98			31·3
		0·25		1·5		0·08		0·2		0·07		0·6
31	56·59			71·2	8·17			64·3	39·91			30·7
		0·28		1·0		0·10		0·0		0·09		0·6
June 10	56·31			72·2	8·07			64·3	39·82			30·1
		0·31		0·6		0·10		0·3		0·08		0·7
20	56·00			72·8	7·97			64·0	39·74			29·4
		0·32		0·2		0·11		0·5		0·10		0·6
30	55·68			73·0	7·86			63·5	39·64			28·8
		0·33		0·4		0·11		0·6		0·10		0·6
July 10	55·35			72·6	7·75			62·9	39·54			28·2
		0·32		0·8		0·11		0·9		0·10		0·5
20	55·03			71·8	7·64			62·0	39·44			27·7
		0·30		1·3		0·11		1·0		0·09		0·6
30	54·73			70·5	7·53			61·0	39·35			27·1
		0·28		1·8		0·10		1·1		0·09		0·4
Aug. 9	54·45			68·7	7·43			59·9	39·26			26·7
		0·24		2·1		0·08		1·2		0·08		0·3
19	54·21			66·6	7·35			58·7	39·18			26·4
		0·18		2·3		0·06		1·1		0·06		0·3
29	54·03			64·3	7·29			57·6	39·12			26·1
		0·12		2·6		0·04		1·2		0·03		0·0
Sept. 8	53·91			61·7	7·25			56·4	39·09			26·1
		0·05		2·7		0·00		1·1		0·01		0·1
18	53·86			59·0	7·25			55·3	39·08			26·2
		0·04		2·7		0·03		1·0		0·02		0·3
28	53·90			56·3	7·28			54·3	39·10			26·5
		0·14		2·8	30	0·09		0·8	8	0·08		0·7
Oct. 8	54·04			53·5	7·37			53·5	39·18			27·2
		0·22		2·4		0·13		0·4		0·11		0·9
18	54·26			51·1	7·50			53·1	39·29			28·1
		0·31		2·0		0·18		0·1		0·15		1·1
28	54·57			49·1	7·68			53·0	39·44			29·2
		0·40		1·6		0·22		0·2		0·19		1·4
Nov. 7	54·97			47·5	7·90			53·2	39·63			30·6
		0·47		1·1		0·26		0·6		0·24		1·6
17	55·44			46·4	8·16			53·8	39·87			32·2
		0·53		0·5		0·30		1·0		0·27		1·8
27	55·97			45·9	8·46			54·8	40·14			34·0
		0·57		0·0		0·33		1·3		0·30		2·0
Dec. 7	56·54			45·9	8·79			56·1	40·44			36·0
		0·60		0·7		0·35		1·7		0·32		2·1
17	57·14			46·6	9·14			57·8	40·76			38·1
		0·61		1·2		0·35		1·9		0·33		2·2
27	57·75			47·8	9·49			59·7	41·09			40·3
		0·59		1·8		0·35		2·2		0·34		2·1
37	58·34			49·6	9·84			61·9	41·43			42·4

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	12 Canum Venaticor.				θ Virginis.				α Virginis. (*Spica*)			
	R. A.		Dec. *North.*		R. A.		Dec. *South.*		R. A.		Dec. *South.*	
	h m		° ′		h m		° ′		h m		° ′	
	12 49		39 3		13 2		4 47		13 17		10 26	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	32·19	0·39	50·1	1·5	46·18	0·34	52·6	2·2	53·18	0·34	10·2	2·1
11	32·58	0·38	48·6	1·1	46·52	0·32	54·8	2·0	53·52	0·33	12·3	2·0
21	32·96	0·35	47·5	0·5	46·84	0·31	56·8	1·8	53·85	0·31	14·3	2·0
31	33·31		47·0		47·15		58·6		54·16		16·3	
		0·32		0·0		0·28		1·7		0·29		1·8
Feb. 10	33·63	0·28	47·0	0·5	47·43	0·24	60·3	1·5	54·45	0·26	18·1	1·7
20	33·91	0·23	47·5	1·0	47·67	0·21	61·8	1·2	54·71	0·22	19·8	1·4
Mar. 2	34·14	0·18	48·5	1·4	47·88	0·17	63·0	1·0	54·93	0·19	21·2	1·3
12	34·32		49·9		48·05		64·0		55·12		22·5	
		0·13		1·7		0·13		0·7		0·15		1·0
22	34·45	0·08	51·6	2·0	48·18	0·10	64·7	0·5	55·27	0·12	23·5	0·8
Apr. 1	34·53	0·03	53·6	2·1	48·28	0·07	65·2	0·2	55·39	0·08	24·3	0·5
11	34·56	0·01	55·7	2·2	48·35	0·04	65·4	0·1	55·47	0·06	24·8	0·4
21	34·55		57·9		48·39		65·5		55·53		25·2	
		0·04		2·2		0·01		0·1		0·02		0·2
May 1	34·51	0·08	60·1	2·0	48·40	0·02	65·4	0·3	55·55	0·00	25·4	0·0
11	34·43	0·11	62·1	1·9	48·38	0·03	65·1	0·4	55·55	0·02	25·4	0·1
21	34·32	0·13	64·0	1·6	48·35	0·05	64·7	0·4	55·53	0·04	25·3	0·2
31	34·19		65·6		48·30		64·3		55·49		25·1	
		0·15		1·3		0·07		0·5		0·06		0·4
June 10	34·04	0·16	66·9	0·9	48·23	0·08	63·8	0·6	55·43	0·07	24·7	0·4
20	33·88	0·16	67·8	0·6	48·15	0·09	63·2	0·6	55·36	0·09	24·3	0·5
30	33·72	0·17	68·4	0·3	48·06	0·10	62·6	0·6	55·27	0·10	23·8	0·6
July 10	33·55		68·7		47·96		62·0		55·17		23·2	
		0·17		0·1		0·10		0·7		0·11		0·6
20	33·38	0·16	68·6	0·6	47·86	0·11	61·3	0·6	55·06	0·11	22·6	0·7
30	33·22	0·15	68·0	0·9	47·75	0·10	60·7	0·5	54·95	0·11	21·9	0·6
Aug. 9	33·07	0·13	67·1	1·2	47·65	0·09	60·2	0·5	54·84	0·10	21·3	0·7
19	32·94		65·9		47·56		59·7		54·74		20·6	
		0·11		1·6		0·08		0·4		0·09		0·6
29	32·83	0·08	64·3	2·0	47·48	0·06	59·3	0·2	54·65	0·08	20·0	0·5
Sept. 8	32·75	0·05	62·3	2·2	47·42	0·04	59·1	0·1	54·57	0·04	19·5	0·4
18	32·70	0·01	60·1	2·5	47·38	0·00	59·0	0·0	54·53	0·01	19·1	0·2
28	32·69		57·6		47·38		59·0		54·52		18·9	
		0·03		3·1		0·04		0·3		0·02		0·1
Oct. 8	32·72	0·09	54·5	2·9	47·42	0·09	59·3	0·7	54·54	0·07	18·8	0·2
18	32·81	0·13	51·6	3·1	47·51	0·13	60·0	0·8	54·61	0·11	19·0	0·5
28	32·94	0·19	48·5	3·0	47·64	0·17	60·8	1·1	54·72	0·17	19·5	0·7
Nov. 7	33·13		45·5		47·81		61·9		54·89		20·2	
		0·25		3·1		0·22		1·4		0·21		1·1
17	33·38	0·29	42·4	3·1	48·03	0·25	63·3	1·6	55·10	0·25	21·3	1·2
27	33·67	0·33	39·3	2·9	48·28	0·29	64·9	1·7	55·35	0·29	22·5	1·5
Dec. 7	34·00	0·35	36·4	2·5	48·57	0·32	66·6	2·0	55·64	0·31	24·0	1·8
17	34·35		33·9		48·89		68·6		55·95		25·8	
		0·38		2·2		0·33		2·1		0·33		1·9
27	34·73	0·39	31·7	1·8	49·22	0·33	70·7	2·1	56·28	0·33	27·7	2·0
37	35·12		29·9		49·55		72·8		56·61		29·7	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	ζ Virginis.				η Ursæ Majoris.				η Bootis.			
	R. A.		Dec. *North.*		R. A.		Dec. *North.*		R. A.		Dec. *North.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	13 27		0 6		13 42		49 59		13 48		19 5	
Jan. 1		37·51		49·5		4·05		65·8		4·55		29·7
												2·1
11		37·84	0·33	47·4	2·1	4·48	0·43	63·9	1·9	4·89	0·34	27·6
			0·33		1·9		0·44		1·3		0·34	1·8
21		38·17		45·5		4·92		62·6		5·23		25·8
			0·31		1·8		0·43		0·7		0·33	1·4
31		38·48		43·7		5·35		61·9		5·56		24·4
			0·29		1·5		0·40		0·1		0·30	1·1
Feb. 10		38·77		42·2		5·75		61·8		5·86		23·3
			0·26		1·3		0·36		0·6		0·28	0·6
20		39·03		40·9		6·11		62·4		6·14		22·7
			0·23		0·9		0·32		1·1		0·25	0·1
Mar. 2		39·26		40·0		6·43		63·5		6·39		22·6
			0·19		0·7		0·27		1·6		0·21	0·2
12		39·45		39·3		6·70		65·1		6·60		22·8
			0·16		0·4		0·22		2·0		0·18	0·6
22		39·61		38·9		6·92		67·1		6·78		23·4
			0·12		0·2		0·15		2·3		0·14	0·9
Apr. 1		39·73		38·7		7·07		69·4		6·92		24·3
			0·09		0·1		0·10		2·6		0·11	1·2
11		39·82		38·8		7·17		72·0		7·03		25·5
			0·06		0·3		0·04		2·7		0·07	1·4
21		39·88		39·1		7·21		74·7		7·10		26·9
			0·03		0·5		0·01		2·7		0·03	1·5
May 1		39·91		39·6		7·20		77·4		7·13		28·4
			0·00		0·5		0·06		2·6		0·01	1·6
11		39·91		40·1		7·14		80·0		7·14		30·0
			0·01		0·7		0·10		2·5		0·01	1·6
21		39·90		40·8		7·04		82·5		7·13		31·6
			0·04		0·7		0·14		2·2		0·05	1·4
31		39·86		41·5		6·90		84·7		7·08		33·0
			0·06		0·7		0·17		1·9		0·06	1·4
June 10		39·80		42·2		6·73		86·6		7·02		34·4
			0·07		0·7		0·20		1·5		0·08	1·2
20		39·73		42·9		6·53		88·1		6·94		35·6
			0·09		0·7		0·22		1·0		0·10	1·0
30		39·64		43·6		6·31		89·1		6·84		36·6
			0·09		0·7		0·23		0·7		0·12	0·9
July 10		39·55		44·3		6·08		89·8		6·72		37·5
			0·11		0·6		0·24		0·2		0·12	0·5
20		39·44		44·9		5·84		90·0		6·60		38·0
			0·11		0·5		0·25		0·3		0·13	0·3
30		39·33		45·4		5·59		89·7		6·47		38·3
			0·12		0·4		0·24		0·7		0·14	0·1
Aug. 9		39·21		45·8		5·35		89·0		6·33		38·4
			0·11		0·3		0·23		1·2		0·13	0·2
19		39·10		46·1		5·12		87·8		6·20		38·2
			0·09		0·2		0·22		1·7		0·12	0·5
29		39·01		46·3		4·90		86·1		6·08		37·7
			0·08		0·0		0·19		2·0		0·11	0·8
Sept. 8		38·93		46·3		4·71		84·1		5·97		36·9
			0·05		0·1		0·16		2·4		0·09	1·0
18		38·88		46·2		4·55		81·7		5·88		35·9
			0·03		0·3		0·11		2·8		0·05	1·4
28		38·85		45·9		4·44		78·9		5·83		34·5
			0·01		0·6		0·06		3·0		0·02	1·6
Oct. 8		38·86		45·3		4·38		75·9		5·81		32·9
			0·06		0·9		0·01		3·2		0·02	1·9
18		38·92		44·4		4·37		72·7		5·83		31·0
			0·10		1·1		0·06		3·8		0·07	2·3
28		39·02		43·3		4·43		68·9		5·90		28·7
			0·15		1·3		0·13		3·5		0·12	2·4
Nov. 7		39·17		42·0		4·56		65·4		6·02		26·3
			0·19		1·5		0·18		3·6		0·17	2·5
17		39·36		40·5		4·74		61·8		6·19		23·8
			0·23		1·8		0·26		3·5		0·21	2·6
27		39·59		38·7		5·00		58·3		6·40		21·2
			0·27		2·0		0·31		3·2		0·26	2·6
Dec. 7		39·86		36·7		5·31		55·1		6·66		18·6
			0·30		2·0		0·35		2·9		0·29	2·6
17		40·16		34·7		5·66		52·2		6·95		16·0
			0·32		2·1		0·39		2·6		0·31	2·5
27		40·48		32·6		6·05		49·6		7·26		13·5
37		40·81	0·33	30·5	2·1	6·48	0·43	47·5	2·1	7·59	0·33	11·3

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	β Centauri.				τ Virginis.				α Bootis. (*Arcturus*)			
	R.A.		Dec. *South.*		R.A.		Dec. *North.*		R.A.		Dec. *North.*	
	h m		° ′		h m		° ′		h m		° ′	
	13 54		59 41		13 54		2 12		14 9		19 53	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	3·07		51·9		35·01		57·7		19·76		72·3	
		0·58		0·8		0·33		2·1		0·33		2·2
11	3·65		52·7		35·34		55·6		20·09		70·1	
		0·58		1·3		0·33		1·9		0·33		1·9
21	4·23		54·0		35·67		53·7		20·42		68·2	
		0·56		1·8		0·32		1·7		0·33		1·6
31	4·79		55·8		35·99		52·0		20·75		66·6	
		0·53		2·1		0·30		1·4		0·31		1·1
Feb. 10	5·32		57·9		36·29		50·6		21·06		65·5	
		0·49		2·4		0·27		1·2		0·29		0·7
20	5·81		60·3		36·56		49·4		21·35		64·8	
		0·44		2·7		0·25		0·9		0·26		0·3
Mar. 2	6·25		63·0		36·81		48·5		21·61		64·5	
		0·39		2·9		0·21		0·6		0·23		0·2
12	6·64		65·9		37·02		47·9		21·84		64·7	
		0·32		2·9		0·18		0·2		0·19		0·6
22	6·96		68·8		37·20		47·7		22·03		65·3	
		0·27		3·0		0·15		0·0		0·16		0·9
Apr. 1	7·23		71·8		37·35		47·7		22·19		66·2	
		0·21		3·1		0·12		0·2		0·13		1·2
11	7·44		74·9		37·47		47·9		22·32		67·4	
		0·14		2·9		0·08		0·5		0·09		1·4
21	7·58		77·8		37·55		48·4		22·41		68·8	
		0·09		2·8		0·06		0·6		0·05		1·6
May 1	7·67		80·6		37·61		49·0		22·46		70·4	
		0·03		2·6		0·03		0·8		0·03		1·6
11	7·70		83·2		37·64		49·8		22·49		72·0	
		0·02		2·4		0·00		0·8		0·00		1·6
21	7·68		85·6		37·64		50·6		22·49		73·6	
		0·08		2·1		0·02		0·8		0·03		1·6
31	7·60		87·7		37·62		51·4		22·46		75·2	
		0·14		1·8		0·04		0·8		0·06		1·5
June 10	7·46		89·5		37·58		52·2		22·40		76·7	
		0·17		1·4		0·06		0·9		0·07		1·3
20	7·29		90·9		37·52		53·1		22·33		78·0	
		0·22		1·1		0·08		0·8		0·10		1·1
30	7·07		92·0		37·44		53·9		22·23		79·1	
July 10	6·82	0·25	92·6	0·6	37·35	0·09	54·6	0·7	22·12	0·11	80·0	0·9
		0·28		0·1		0·11		0·6		0·13		0·7
20	6·54		92·7		37·24		55·2		21·99		80·7	
		0·30		0·3		0·11		0·5		0·14		0·4
30	6·24		92·4		37·13		55·7		21·85		81·1	
		0·31		0·7		0·12		0·4		0·14		0·1
Aug. 9	5·93		91·7		37·01		56·1		21·71		81·2	
		0·29		1·1		0·12		0·3		0·15		0·2
19	5·64		90·6		36·89		56·4		21·56		81·0	
		0·27		1·6		0·11		0·1		0·14		0·5
29	5·37		89·0		36·78		56·5		21·42		80·5	
		0·24		1·9		0·11		0·0		0·12		0·7
Sept. 8	5·13		87·1		36·67		56·5		21·30		79·8	
		0·20		2·1		0·08		0·2		0·11		1·1
18	4·93		85·0		36·59		56·3		21·19		78·7	
		0·13		2·4		0·05		0·5		0·08		1·3
28	4·80		82·6		36·54		55·8		21·11		77·4	
		0·05		2·4		0·01		0·6		0·04		1·7
Oct. 8	4·75		80·2		36·53		55·2		21·07		75·7	
		0·03		2·5		0·02		0·9		0·01		1·9
18	4·78		77·7		36·55		54·3		21·06		73·8	
		0·14		2·6		0·07		1·3		0·05		2·4
28	4·92		75·1		36·62		53·0		21·11		71·4	
		0·22		2·1		0·13		1·4		0·09		2·4
Nov. 7	5·14		73·0		36·75		51·6		21·20		69·0	
		0·31		1·8		0·17		1·6		0·15		2·5
17	5·45		71·2		36·92		50·0		21·35		66·5	
		0·38		1·4		0·21		1·8		0·19		2·7
27	5·83		69·8		37·13		48·2		21·54		63·8	
		0·45		1·0		0·25		2·0		0·23		3·8
Dec. 7	6·28		68·8		37·38		46·2		21·77		61·0	
		0·51		0·5		0·28		2·1		0·27		2·6
17	6·79		68·3		37·66		44·1		22·04		58·4	
		0·55		0·1		0·31		2·1		0·30		2·6
27	7·34		68·4		37·97		42·0		22·34		55·8	
		0·58		0·6		0·33		2·0		0·33		2·4
37	7·92		69·0		38·30		40·0		22·67		53·4	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	ρ Bootis.				α¹ Centauri.				ε Bootis.			
	R.A.		Dec. *North.*		R.A.		Dec. *South.*		R.A.		Dec. *North.*	
	h m		° ′		h m		° ′		h m		° ′	
	14 25		30 58		14 30		60 15		14 38		27 39	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	50·64	0·34	41·8	2·3	11·99	0·57	15·9	0·3	55·14	0·33	26·2	2·4
11	50·98	0·35	39·5	1·9	12·56	0·58	16·2	0·8	55·47	0·34	23·8	2·0
21	51·33	0·35	37·6	1·5	13·14	0·57	17·0	1·2	55·81	0·34	21·8	1·5
31	51·68		36·1		13·71		18·2		56·15		20·3	
		0·34		0·9		0·56		1·6		0·33		1·1
Feb. 10	52·02		35·2		14·27		19·8		56·48		19·2	
20	52·34	0·32	34·8	0·4	14·80	0·53	21·8	2·0	56·80	0·32	18·7	0·5
Mar. 2	52·63	0·29	35·0	0·2	15·28	0·48	24·0	2·2	57·09	0·29	18·6	0·1
12	52·88	0·25	35·6	0·6	15·72	0·44	26·5	2·5	57·35	0·26	19·0	0·4
		0·22		1·1		0·39		2·7		0·23		0·9
22	53·10		36·7		16·11		29·2		57·58		19·9	
Apr. 1	53·29	0·19	38·2	1·5	16·44	0·33	31·9	2·7	57·77	0·19	21·2	1·3
11	53·43	0·14	39·9	1·7	16·71	0·27	34·7	2·8	57·93	0·16	22·8	1·6
21	53·53	0·10	41·9	2·0	16·92	0·21	37·5	2·8	58·05	0·12	24·7	1·9
		0·07		2·2		0·15		2·7		0·08		2·0
May 1	53·60		44·1		17·07		40·2		58·13		26·7	
11	53·64	0·04	46·4	2·3	17·16	0·09	42·8	2·6	58·18	0·05	28·8	2·1
21	53·64	0·00	48·6	2·2	17·19	0·03	45·3	2·5	58·20	0·02	31·0	2·2
31	53·60	0·04	50·7	2·1	17·17	0·02	47·5	2·2	58·18	0·02	33·1	2·1
		0·06		1·9		0·09		2·0		0·04		1·9
June 10	53·54		52·6		17·08		49·5		58·14		35·0	
20	53·45	0·09	54·3	1·7	16·94	0·14	51·2	1·7	58·07	0·07	36·7	1·7
30	53·34	0·11	55·8	1·5	16·74	0·20	52·5	1·3	57·97	0·10	38·2	1·5
July 10	53·20	0·14	56·9	1·1	16·50	0·24	53·4	0·9	57·85	0·12	39·5	1·3
		0·15		0·8		0·28		0·6		0·14		0·9
20	53·05		57·7		16·22		54·0		57·71		40·4	
30	52·89	0·16	58·2	0·5	15·91	0·31	54·1	0·1	57·55	0·16	41·0	0·6
Aug. 9	52·72	0·17	58·3	0·1	15·58	0·33	53·7	0·4	57·39	0·16	41·2	0·2
19	52·54	0·18	58·0	0·3	15·25	0·33	52·9	0·8	57·22	0·17	41·1	0·1
		0·17		0·6		0·32		1·2		0·17		0·4
29	52·37		57·4		14·93		51·7		57·05		40·7	
Sept. 8	52·21	0·16	56·4	1·0	14·63	0·30	50·1	1·6	56·89	0·16	39·8	0·9
18	52·07	0·14	55·0	1·4	14·38	0·25	48·2	1·9	56·75	0·14	38·6	1·2
28	51·96	0·11	53·3	1·7	14·18	0·20	46·0	2·2	56·63	0·12	37·1	1·5
		0·08		2·0		0·13		2·4		0·09		1·8
Oct. 8	51·88		51·3		14·05		43·6		56·54		35·3	
18	51·85	0·03	48·9	2·4	14·00	0·05	41·2	2·4	56·50	0·04	33·2	2·1
28	51·86	0·01	46·3	2·6	14·04	0·04	38·7	2·5	56·50	0·00	30·8	2·4
Nov. 7	51·93	0·07	43·2	3·1	14·19	0·15	36·3	2·4	56·56	0·06	27·9	2·9
		0·13		3·0		0·23		2·1		0·11		2·9
17	52·06		40·2		14·42		34·2		56·67		25·0	
27	52·24	0·18	37·2	3·0	14·74	0·32	32·4	1·8	56·83	0·16	22·1	2·9
Dec. 7	52·46	0·22	34·1	3·1	15·14	0·40	31·0	1·4	57·04	0·21	19·2	2·9
17	52·73	0·27	31·1	3·0	15·61	0·47	30·1	0·9	57·30	0·26	16·3	2·9
		0·30		2·7		0·52		0·4		0·29		2·8
27	53·03		28·4		16·13		29·7		57·59		13·5	
37	53·37	0·34	26·0	2·4	16·69	0·56	29·7	0·0	57·91	0·32	11·0	2·5

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α^2 Libræ.		β Ursæ Minoris.		ψ Bootis.	
	R. A.	Dec. *South.*	R. A.	Dec. *North.*	R. A.	Dec. *North.*
	h m s	° ′ ″	h m s	° ′ ″	h m s	° ′ ″
	14 43	15 27	14 51	74 42	14 58	27 29
	s ″ s	″ ″	s ″ s	″ ″	s ″ s	″ ″
Jan. 1	11·93	46·6	6·92	59·9	29·52	13·8
		1·5	0·77	2·2		2·4
11	12·26	48·1	7·69	57·7	29·84	11·4
		1·6	0·84	1·7	0·32	2·1
21	12·60	49·7	8·53	56·0	30·18	9·3
		1·6	0·88	1·0	0·34	1·7
31	12·94	51·3	9·41	55·0	30·52	7·6
	0·33	1·6	0·88	0·3	0·33	1·2
Feb. 10	13·27	52·9	10·29	54·7	30·85	6·4
	0·31	1·5	0·86	0·3	0·32	0·7
20	13·58	54·4	11·15	55·0	31·17	5·7
	0·28	1·4	0·80	1·0	0·30	0·1
Mar. 2	13·86	55·8	11·95	56·0	31·47	5·6
	0·26	1·1	0·72	1·6	0·27	0·4
12	14·12	56·9	12·67	57·6	31·74	6·0
	0·24	1·0	0·62	2·1	0·24	0·8
22	14·36	57·9	13·29	59·7	31·98	6·8
	0·20	0·9	0·49	2·6	0·21	1·2
Apr. 1	14·56	58·8	13·78	62·3	32·19	8·0
	0·17	0·6	0·36	2·9	0·18	1·6
11	14·73	59·4	14·14	65·2	32·37	9·6
	0·15	0·5	0·22	3·1	0·14	1·9
21	14·88	59·9	14·36	68·3	32·51	11·5
	0·11	0·3	0·07	3·3	0·10	2·0
May 1	14·99	60·2	14·43	71·6	32·61	13·5
	0·09	0·2	0·07	3·2	0·07	2·2
11	15·08	60·4	14·36	74·8	32·68	15·7
	0·06	0·0	0·21	3·1	0·04	2·2
21	15·14	60·4	14·15	77·9	32·72	17·9
	0·03	0·0	0·34	2·8	0·00	2·2
31	15·17	60·4	13·81	80·7	32·72	20·1
	0·00	0·1	0·45	2·5	0·02	2·0
June 10	15·17	60·3	13·36	83·2	32·70	22·1
	0·03	0·2	0·55	2·2	0·06	1·9
20	15·14	60·1	12·81	85·4	32·64	24·0
	0·05	0·3	0·63	1·7	0·09	1·6
30	15·09	59·8	12·18	87·1	32·55	25·6
	0·08	0·4	0·71	1·2	0·11	1·3
July 10	15·01	59·4	11·47	88·3	32·44	26·9
	0·10	0·4	0·76	0·7	0·14	1·1
20	14·91	59·0	10·71	89·0	32·30	28·0
	0·11	0·5	0·80	0·2	0·15	0·8
30	14·80	58·5	9·91	89·2	32·15	28·8
	0·13	0·5	0·81	0·3	0·17	0·4
Aug. 9	14·67	58·0	9·10	88·9	31·98	29·2
	0·14	0·6	0·81	0·9	0·18	0·0
19	14·53	57·4	8·29	88·0	31·80	29·2
	0·14	0·5	0·79	1·3	0·18	0·3
29	14·39	56·9	7·50	86·7	31·62	28·9
	0·13	0·6	0·75	1·9	0·17	0·6
Sept. 8	14·26	56·3	6·75	84·8	31·45	28·3
	0·12	0·5	0·69	2·3	0·15	1·0
18	14·14	55·8	6·06	82·5	31·30	27·3
	0·09	0·4	0·62	2·7	0·13	1·4
28	14·05	55·4	5·44	79·8	31·17	25·9
	0·06	0·4	0·52	3·1	0·11	1·8
Oct. 8	13·99	55·0	4·92	76·7	31·06	24·1
	0·01	0·2	0·40	3·4	0·07	2·0
18	13·98	54·8	4·52	73·3	30·99	22·1
	0·03	0·0	0·27	3·6	0·02	2·3
28	14·01	54·8	4·25	69·7	30·97	19·8
	0·08	0·2	0·13	3·7	0·03	2·6
Nov. 7	14·09	55·0	{4 : 11 / 4 : 11}	{4 : 6 / 4 : 6}	31·00	17·2
	0·13	0·4	0·03	3·8	0·10	3·1
17	14·22	55·4	4·14	61·8	31·10	14·1
	0·19	0·7	0·18	3·8	0·14	2·9
27	14·41	56·1	4·32	58·0	31·24	11·2
	0·23	0·9	0·34	3·6	0·19	2·9
Dec. 7	14·64	57·0	4·66	54·4	31·43	8·3
	0·27	1·2	0·48	3·3	0·23	2·9
17	14·91	58·2	5·14	51·1	31·66	5·4
	0·30	1·3	0·61	3·0	0·27	2·8
27	15·21	59·5	5·75	48·1	31·93	2·6
	0·32	1·5	0·73	2·5	0·31	2·6
37	15·53	61·0	6·48	45·6	32·24	0·0

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	β Librae.				α Coronae Borealis.				α Serpentis.			
	R.A.		Dec. *South.*		R.A.		Dec. *North.*		R.A.		Dec. *North.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	15 9		8 52		15 28		27 10		15 37		6 51	
Jan. 1	32·01	0·31	8·9	1·6	48·04	0·30	49·7	2·5	25·36	0·29	45·9	2·0
11	32·32	0·33	10·5	1·6	48·34	0·32	47·2	2·2	25·65	0·30	43·9	1·9
21	32·65	0·33	12·1	1·6	48·66	0·33	45·0	1·8	25·95	0·31	42·0	1·7
31	32·98		13·7		48·99		43·2		26·26		40·3	
		0·32		1·5		0·34		1·4		0·32		1·4
Feb. 10	33·30	0·31	15·2	1·2	49·33	0·32	41·8	0·9	26·58	0·31	38·9	1·1
20	33·61	0·29	16·4	1·1	49·65	0·31	40·9	0·3	26·89	0·29	37·8	0·7
Mar. 2	33·90	0·27	17·5	0·9	49·96	0·29	40·6	0·2	27·18	0·28	37·1	0·4
12	34·17		18·4		50·25		40·8		27·46		36·7	
		0·25		0·6		0·27		0·7		0·25		0·0
22	34·42	0·22	19·0	0·4	50·52	0·23	41·5	1·1	27·71	0·23	36·7	0·3
Apr. 1	34·64	0·19	19·4	0·2	50·75	0·21	42·6	1·5	27·94	0·22	37·0	0·7
11	34·83	0·16	19·6	0·0	50·96	0·17	44·1	1·9	28·16	0·18	37·7	0·9
21	34·99		19·6		51·13		46·0		28·34		38·6	
		0·14		0·1		0·13		2·1		0·15		1·1
May 1	35·13	0·11	19·5	0·3	51·26	0·11	48·1	2·2	28·49	0·12	39·7	1·2
11	35·24	0·08	19·2	0·4	51·37	0·07	50·3	2·3	28·61	0·09	40·9	1·3
21	35·32	0·05	18·8	0·4	51·44	0·03	52·6	2·3	28·70	0·07	42·2	1·4
31	35·37		18·4		51·47		54·9		28·77		43·6	
		0·02		0·5		0·00		2·1		0·03		1·4
June 10	35·39	0·01	17·9	0·5	51·47	0·04	57·0	2·1	28·80	0·00	45·0	1·3
20	35·38	0·04	17·4	0·6	51·43	0·06	59·1	1·8	28·80	0·02	46·3	1·3
30	35·34	0·06	16·8	0·6	51·37	0·10	60·9	1·6	28·78	0·06	47·6	1·1
July 10	35·28		16·2		51·27		62·5		28·72		48·7	
		0·09		0·5		0·12		1·3		0·09		1·0
20	35·19	0·11	15·7	0·5	51·15	0·15	63·8	1·0	28·63	0·11	49·7	0·8
30	35·08	0·13	15·2	0·5	51·00	0·17	64·8	0·7	28·52	0·13	50·5	0·6
Aug. 9	34·95	0·14	14·7	0·5	50·83	0·18	65·5	0·3	28·39	0·14	51·1	0·5
19	34·81		14·2		50·65		65·8		28·25		51·6	
		0·14		0·4		0·18		0·1		0·15		0·3
29	34·67	0·14	13·8	0·4	50·47	0·19	65·7	0·4	28·10	0·16	51·9	0·0
Sept. 8	34·53	0·13	13·4	0·2	50·28	0·17	65·3	0·8	27·94	0·15	51·9	0·2
18	34·40	0·11	13·2	0·2	50·11	0·16	64·5	1·2	27·79	0·13	51·7	0·4
28	34·29		13·0		49·95		63·3		27·66		51·3	
		0·08		0·0		0·13		1·5		0·11		0·6
Oct. 8	34·21	0·04	13·0	0·1	49·82	0·10	61·8	1·9	27·55	0·07	50·7	0·9
18	34·17	0·00	13·1	0·4	49·72	0·05	59·9	2·2	27·48	0·04	49·8	1·2
28	34·17	0·04	13·5	0·5	49·67	0·00	57·7	2·4	27·44	0·01	48·6	1·4
Nov. 7	34·21		14·0		49·67		55·3		27·45		47·2	
		0·11		0·8		0·05		3·0		0·06		1·6
17	34·32	0·16	14·8	1·0	49·72	0·11	52·3	2·8	27·51	0·12	45·6	2·0
27	34·48	0·20	15·8	1·2	49·83	0·16	49·5	3·0	27·63	0·16	43·6	2·0
Dec. 7	34·68	0·24	17·0	1·4	49·99	0·21	46·5	2·9	27·79	0·21	41·6	2·0
17	34·92		18·4		50·20		43·6		28·00		39·6	
		0·27		1·5		0·25		2·8		0·24		2·1
27	35·19	0·30	19·9	1·6	50·45	0·28	40·8	2·7	28·24	0·27	37·5	2·1
37	35·49		21·5		50·73		38·1		28·51		35·4	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	ζ Ursæ Minoris.				β¹ Scorpii.				δ Ophiuchi.			
	R. A.		Dec. *North.*		R. A.		Dec. *South.*		R. A.		Dec. *South.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	15 48		78 12		15 57		19 25		16 7		3 20	
Jan. 1	61·25	0·78	52·8	2·8	21·53	0·31	21·4	1·0	3·74	0·27	7·6	1·6
11	62·03	0·91	50·0	2·2	21·84	0·32	22·4	1·1	4·01	0·30	9·2	1·6
21	62·94	1·01	47·8	1·7	22·16	0·33	23·5	1·1	4·31	0·31	10·8	1·4
31	63·95	1·08	46·1	1·0	22·49	0·34	24·6	1·1	4·62	0·31	12·2	1·3
Feb. 10	65·03	1·11	45·1	0·4	22·83	0·34	25·7	1·0	4·93	0·31	13·5	1·1
20	66·14	1·08	44·7	0·3	23·17	0·32	26·7	1·0	5·24	0·30	14·6	0·8
Mar. 2	67·22	1·03	45·0	1·0	23·49	0·31	27·7	0·9	5·54	0·29	15·4	0·6
12	68·25	0·94	46·0	1·6	23·80	0·29	28·6	0·8	5·83	0·28	16·0	0·3
22	69·19	0·81	47·6	2·1	24·09	0·26	29·4	0·6	6·11	0·25	16·3	0·0
Apr. 1	70·00	0·67	49·7	2·6	24·35	0·25	30·0	0·5	6·36	0·23	16·3	0·2
11	70·67	0·50	52·3	2·9	24·60	0·22	30·5	0·4	6·59	0·21	16·1	0·5
21	71·17	0·32	55·2	3·1	24·82	0·19	30·9	0·3	6·80	0·19	15·6	0·6
May 1	71·49	0·14	58·3	3·2	25·01	0·17	31·2	0·2	6·99	0·16	15·0	0·8
11	71·63	0·05	61·5	3·3	25·18	0·13	31·4	0·1	7·15	0·13	14·2	0·8
21	71·58	0·23	64·8	3·2	25·31	0·10	31·5	0·0	7·28	0·09	13·4	0·9
31	71·35	0·41	68·0	2·9	25·41	0·07	31·5	0·0	7·37	0·07	12·5	1·0
June 10	70·94	0·56	70·9	2·7	25·48	0·04	31·5	0·0	7·44	0·04	11·5	0·9
20	70·38	0·71	73·6	2·4	25·52	0·00	31·5	0·1	7·48	0·00	10·6	0·9
30	69·67	0·84	76·0	1·9	25·52	0·04	31·4	0·2	7·48	0·03	9·7	0·8
July 10	68·83	0·94	77·9	1·5	25·48	0·07	31·2	0·2	7·45	0·07	8·9	0·8
20	67·89	1·03	79·4	1·0	25·41	0·09	31·0	0·2	7·38	0·09	8·1	0·7
30	66·86	1·09	80·4	0·6	25·32	0·12	30·8	0·3	7·29	0·12	7·4	0·6
Aug. 9	65·77	1·12	81·0	0·1	25·20	0·15	30·5	0·4	7·17	0·13	6·8	0·4
19	64·65	1·14	80·9	0·5	25·05	0·16	30·1	0·4	7·04	0·15	6·4	0·4
29	63·51	1·12	80·4	1·1	24·89	0·16	29·7	0·4	6·89	0·16	6·0	0·2
Sept. 8	62·39	1·08	79·3	1·5	24·73	0·16	29·3	0·5	6·73	0·16	5·8	0·1
18	61·31	1·01	77·8	2·0	24·57	0·14	28·8	0·4	6·57	0·15	5·7	0·0
28	60·30	0·92	75·8	2·5	24·43	0·12	28·4	0·4	6·42	0·13	5·7	0·2
Oct. 8	59·38	0·79	73·3	2·8	24·31	0·08	28·0	0·4	6·29	0·09	5·9	0·3
18	58·59	0·65	70·5	3·1	24·23	0·04	27·6	0·3	6·20	0·05	6·2	0·5
28	57·94	0·48	67·4	3·5	24·19	0·00	27·3	0·2	6·15	0·00	6·7	0·8
Nov. 7	57·46	0·30	63·9	3·6	24·19	0·06	27·1	0·0	6·15	0·04	7·5	1·0
17	57·16	0·11	60·3	4·0	24·25	0·12	27·1	0·2	6·19	0·09	8·5	1·2
27	57·05	0·12	56·3	3·7	24·37	0·17	27·3	0·4	6·28	0·14	9·7	1·3
Dec. 7	57·17	0·33	52·6	3·6	24·54	0·21	27·7	0·5	6·42	0·19	11·0	1·5
17	57·50	0·51	49·0	3·3	24·75	0·25	28·2	0·8	6·61	0·23	12·5	1·5
27	58·01	0·70	45·7	2·9	25·00	0·29	29·0	0·9	6·84	0·25	14·0	1·6
37	58·71		42·8		25·29		29·9		7·09		15·6	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Scorpii. (*Antares*)				η Draconis.				α Trianguli Australis.			
	R. A.		Dec. *South.*		R. A.		Dec. *North.*		R. A.		Dec. *South.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	16 20		26 7		16 22		61 49		16 33		68 45	
Jan. 1		53·27		13·9		5·53		30·1		57·75		53·3
		0·30		0·5		0·35		3·2		0·62		1·6
11		53·57		14·4		5·88		26·9		58·37		51·7
		0·33		0·6		0·42		2·7		0·69		1·2
21		53·90		15·0		6·30		24·2		59·06		50·5
		0·34		0·7		0·47		2·2		0·74		0·8
31		54·24		15·7		6·77		22·0		59·80		49·7
		0·35		0·8		0·50		1·6		0·77		0·3
Feb. 10		54·59		16·5		7·27		20·4		60·57		49·4
		0·35		0·9		0·52		1·0		0·79		0·0
20		54·94		17·4		7·79		19·4		61·36		49·4
		0·34		0·8		0·52		0·3		0·79		0·5
Mar. 2		55·28		18·2		8·31		19·1		62·15		49·9
		0·33		0·8		0·50		0·4		0·77		0·8
12		55·61		19·0		8·81		19·5		62·92		50·7
		0·32		0·8		0·47		1·1		0·74		1·2
22		55·93		19·8		9·28		20·6		63·66		51·9
		0·29		0·7		0·43		1·6		0·70		1·6
Apr. 1		56·22		20·5		9·71		22·2		64·36		53·5
		0·28		0·6		0·39		2·2		0·65		1·8
11		56·50		21·1		10·10		24·4		65·01		55·3
		0·25		0·6		0·32		2·6		0·59		2·0
21		56·75		21·7		10·42		27·0		65·60		57·3
		0·23		0·5		0·25		2·9		0·52		2·2
May 1		56·98		22·2		10·67		29·9		66·12		59·5
		0·19		0·5		0·18		3·2		0·45		2·4
11		57·17		22·7		10·85		33·1		66·57		61·9
		0·17		0·4		0·10		3·3		0·37		2·5
21		57·34		23·1		10·95		36·4		66·94		64·4
		0·13		0·4		0·03		3·3		0·27		2·6
31		57·47		23·5		10·98		39·7		67·21		67·0
		0·10		0·3		0·04		3·2		0·18		2·5
June 10		57·57		23·8		10·94		42·9		67·39		69·5
		0·06		0·3		0·12		3·1		0·08		2·5
20		57·63		24·1		10·82		46·0		67·47		72·0
		0·02		0·2		0·18		2·8		0·02		2·4
30		57·65		24·3		10·64		48·8		67·45		74·4
		0·02		0·2		0·25		2·4		0·12		2·1
July 10		57·63		24·5		10·39		51·2		67·33		76·5
		0·06		0·1		0·31		2·1		0·21		1·9
20		57·57		24·6		10·08		53·3		67·12		78·4
		0·09		0·1		0·36		1·6		0·30		1·5
30		57·48		24·7		9·72		54·9		66·82		79·9
		0·12		0·1		0·40		1·2		0·38		1·1
Aug. 9		57·36		24·6		9·32		56·1		66·44		81·0
		0·15		0·2		0·44		0·6		0·43		0·7
19		57·21		24·4		8·88		56·7		66·01		81·7
		0·16		0·3		0·45		0·2		0·47		0·3
29		57·05		24·1		8·43		56·9		65·54		82·0
		0·18		0·4		0·46		0·4		0·50		0·1
Sept. 8		56·87		23·7		7·97		56·5		65·04		81·9
		0·17		0·4		0·45		0·8		0·50		0·7
18		56·70		23·3		7·52		55·7		64·54		81·2
		0·16		0·6		0·44		1·4		0·47		1·2
28		56·54		22·7		7·08		54·3		64·07		80·0
		0·14		0·6		0·40		1·9		0·41		1·6
Oct. 8		56·40		22·1		6·68		52·4		63·66		78·4
		0·11		0·6		0·35		2·3		0·34		1·9
18		56·29		21·5		6·33		50·1		63·32		76·5
		0·06		0·7		0·29		2·7		0·26		2·3
28		56·23		20·8		6·04		47·4		63·06		74·2
		0·02		0·5		0·22		3·1		0·14		2·5
Nov. 7		56·21		20·3		5·82		44·3		62·92		71·7
		0·03		0·4		0·14		3·4		0·02		2·6
17		56·24		19·9		5·68		40·9		62·90		69·1
		0·09		0·3		0·05		3·6		0·11		2·6
27		56·33		19·6		5·63		37·3		63·01		66·5
		0·17		0·2		0·06		4·0		0·26		2·8
Dec. 7		56·50		19·4		5·69		33·3		63·27		63·7
		0·20		0·0		0·14		3·7		0·36		2·4
17		56·70		19·4		5·83		29·6		63·63		61·3
		0·24		0·3		0·23		3·5		0·48		2·1
27		56·94		19·7		6·06		26·1		64·11		59·2
		0·29		0·4		0·32		3·4		0·57		1·9
37		57·23		20·1		6 38		22·7		64·68		57·3

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	ζ Herculis.				κ Ophiuchi.				ε Ursæ Minoris.			
	R. A.		Dec. *North.*		R. A.		Dec. *North.*		R. A.		Dec. *North.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	16 36		31 51		16 51		9 35		17 0		82 15	
Jan. 1		2·25		12·1		5·17		29·9		10·14		21·9
11		2·49		9·4		5·40		27·8		10·81		18·7
21		2·77		6·8		5·67		25·9		11·77		15·9
31		3·08		4·6		5·95		24·2		12·98		13·5
Feb. 10		3·41		2·9		6·24		22·7		14·37		11·7
20		3·74		1·7		6·54		21·6		15·90		10·5
Mar. 2		4·06		1·0		6·84		20·8		17·50		9·9
12		4·38		0·9		7·14		20·5		19·12		10·0
22		4·69		1·4		7·43		20·5		20·69		10·7
Apr. 1		4·97		2·5		7·70		20·9		22·16		12·0
11		5·24		3·9		7·96		21·7		23·47		13·9
21		5·48		5·8		8·19		22·8		24·59		16·3
May 1		5·68		8·1		8·40		24·2		25·47		19·0
11		5·85		10·6		8·59		25·7		26·09		22·0
21		5·98		13·2		8·75		27·4		26·44		25·2
31		6·08		15·9		8·88		29·1		26·51		28·5
June 10		6·13		18·5		8·97		30·9		26·29		31·8
20		6·15		21·1		9·03		32·6		25·80		34·9
30		6·13		23·6		9·06		34·3		25·04		37·9
July 10		6·06		25·8		9·05		35·8		24·04		40·6
20		5·96		27·7		9·00		37·2		22·82		42·9
30		5·82		29·3		8·92		38·3		21·41		44·9
Aug. 9		5·65		30·6		8·81		39·3		19·85		46·4
19		5·46		31·5		8·67		40·1		18·17		47·4
29		5·25		32·0		8·51		40·6		16·39		48·0
Sept. 8		5·04		32·1		8·34		40·9		14·56		48·1
18		4·82		31·8		8·16		40·9		12·73		47·6
28		4·60		31·0		7·99		40·7		10·94		46·7
Oct. 8		4·41		29·8		7·84		40·2		9·22		45·3
18		4·25		28·2		7·71		39·5		7·62		43·4
28		4·12		26·3		7·61		38·5		6·18		41·0
Nov. 7		4·03		24·1		7·55		37·2		4·94		38·3
17		3·99		21·6		7·53		35·7		3·94		35·3
27		4·02		18·8		7·56		34·0		3·21		32·0
Dec. 7		4·10		15·5		7·66		31·9		{ν: 2·67 / ν²: 2·67}		{ν: 24·7 / ν²: 24·7}
17		4·23		12·5		7·79		29·8		2·67		24·7
27		4·41		9·5		7·97		27·7		2·90		21·2
37		4·64		6·6		8·18		25·7		3·44		17·9

		0·33		1·7			0·29		1·5		1·39		1·8
		0·31		0·5			0·29		0·0		1·57		0·7
		0·20		2·3			0·21		1·4		0·88		2·7
		0·05		2·6			0·09		1·8		0·22		3·3
		0·10		1·9			0·05		1·4		1·22		2·3
		0·21		0·5			0·16		0·5		1·78		0·6
		0·19		1·2			0·15		0·5		1·72		1·4
		0·04		2·5			0·02		1·5		1·00		3·0
		0·18		3·0			0·18		2·1		0·33		3·5

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Herculis.				θ Ophiuchi.				β Draconis.			
	R. A.		Dec. *North.*		R. A.		Dec. *South.*		R. A.		Dec. *North.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	17 8		14 32		17 13		24 51		17 27		52 23	
Jan. 1		18·17		57·5		28·28		26·0		15·93		69·7
			0·22				0·25				0·21	
11		18·39		55·3		28·53		26·2		16·14		66·4
			0·25				0·29				0·27	
21		18·64		53·2		28·82		26·5		16·41		63·3
			0·27				0·31				0·32	
31		18·91		51·3		29·13		26·9		16·73		60·6
			0·29				0·32				0·36	
Feb. 10		19·20		49·8		29·45		27·3		17·09		58·4
			0·30				0·34				0·39	
20		19·50		48·6		29·79		27·7		17·48		56·7
			0·30				0·34				0·41	
Mar. 2		19·80		47·8		30·13		28·1		17·89		55·7
			0·30				0·33				0·42	
12		20·10		47·4		30·46		28·5		18·31		55·3
			0·30				0·33				0·41	
22		20·40		47·5		30·79		28·8		18·72		55·5
			0·28				0·32				0·39	
Apr. 1		20·68		48·0		31·11		29·1		19·11		56·4
			0·27				0·30				0·37	
11		20·95		48·9		31·41		29·3		19·48		57·9
			0·24				0·29				0·34	
21		21·19		50·2		31·70		29·4		19·82		60·0
			0·23				0·27				0·30	
May 1		21·42		51·7		31·97		29·6		20·12		62·5
			0·20				0·24				0·26	
11		21·62		53·5		32·21		29·6		20·38		65·3
			0·17				0·22				0·20	
21		21·79		55·4		32·43		29·7		20·58		68·4
			0·14				0·18				0·15	
31		21·93		57·5		32·61		29·8		20·73		71·7
			0·11				0·15				0·10	
June 10		22·04		59·6		32·76		29·9		20·83		75·0
			0·08				0·11				0·03	
20		22·12		61·6		32·87		30·0		20·86		78·3
			0·03				0·07				0·03	
30		22·15		63·5		32·94		30·2		20·83		81·5
			0·00				0·03				0·08	
July 10		22·15		65·3		32·97		30·3		20·75		84·4
			0·05				0·01				0·15	
20		22·10		67·0		32·96		30·5		20·60		87·1
			0·08				0·06				0·20	
30		22·02		68·4		32·90		30·5		20·40		89·5
			0·10				0·09				0·24	
Aug. 9		21·92		69·5		32·81		30·6		20·16		91·5
			0·14				0·13				0·28	
19		21·78		70·5		32·68		30·6		19·88		93·0
			0·17				0·16				0·32	
29		21·61		71·1		32·52		30·5		19·56		94·1
			0·18				0·17				0·34	
Sept. 8		21·43		71·5		32·35		30·4		19·22		94·8
			0·18				0·18				0·35	
18		21·25		71·6		32·17		30·2		18·87		94·9
			0·18				0·18				0·35	
28		21·07		71·3		31·99		29·9		18·52		94·5
			0·17				0·16				0·34	
Oct. 8		20·90		70·8		31·83		29·5		18·18		93·6
			0·14				0·14				0·31	
18		20·76		70·0		31·69		29·1		17·87		92·2
			0·12				0·11				0·28	
28		20·64		68·9		31·58		28·6		17·59		90·3
			0·08				0·07				0·23	
Nov. 7		20·56		67·5		31·51		28·2		17·36		87·9
			0·03				0·02				0·17	
17		20·53		65·8		31·49		27·8		17·19		85·2
			0·01				0·04				0·11	
27		20·54		63·9		31·53		27·5		17·08		82·2
			0·06				0·08				0·04	
Dec. 7		20·60		61·8		31·61		27·3		17·04		78·9
			0·12				0·16				0·04	
17		20·72		59·3		31·77		27·2		17·08		75·1
			0·16				0·19				0·11	
27		20·88		57·0		31·96		27·2		17·19		71·6
			0·19				0·24				0·18	
37		21·07		54·8		32·20		27·3		17·37		68·3

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Ophiuchi. R.A.		Dec. North.		μ Herculis. R.A.		Dec. North.	
	h 17 m s	s	° ′ ″	″	h 17 m s	s	° ′ ″	″
Jan. 1	28 28·53	0·20	39 43·7	2·2	41 0·45	0·18	48 7·5	2·7
11	28·73	0·23	41·5	2·0	0·63	0·22	4·8	2·6
21	28·96	0·26	39·5	1·8	0·85	0·26	48 2·2	2·4
31	29·22	0·28	37·7	1·5	1·11	0·28	47 59·8	2·0
Feb. 10	29·50	0·29	36·2	1·2	1·39	0·29	57·8	1·5
20	29·79	0·29	35·0	0·9	1·68	0·31	56·3	1·0
Mar. 2	30·08	0·30	34·1	0·4	1·99	0·31	55·3	0·5
12	30·38	0·29	33·7	0·1	2·30	0·31	54·8	0·0
22	30·67	0·29	33·8	0·4	2·61	0·31	54·8	0·6
Apr. 1	30·96	0·28	34·2	0·8	2·92	0·30	55·4	1·1
11	31·24	0·26	35·0	1·2	3·22	0·27	56·5	1·5
21	31·50	0·24	36·2	1·5	3·49	0·26	58·0	1·9
May 1	31·74	0·22	37·7	1·7	3·75	0·23	47 59·9	2·2
11	31·96	0·19	39·4	1·9	3·98	0·20	48 2·1	2·5
21	32·15	0·16	41·3	2·0	4·18	0·16	4·6	2·6
31	32·31	0·13	43·3	2·0	4·34	0·13	7·2	2·7
June 10	32·44	0·09	45·3	2·0	4·47	0·09	9·9	2·7
20	32·53	0·05	47·3	1·9	4·56	0·05	12·6	2·6
30	32·58	0·02	49·2	1·8	4·61	0·00	15·2	2·4
July 10	32·60	0·02	51·0	1·7	4·61	0·04	17·6	2·3
20	32·58	0·06	52·7	1·4	4·57	0·08	19·9	2·0
30	32·52	0·10	54·1	1·2	4·49	0·12	21·9	1·7
Aug. 9	32·42	0·13	55·3	1·0	4·37	0·15	23·6	1·3
19	32·29	0·15	56·3	0·8	4·22	0·18	24·9	1·0
29	32·14	0·17	57·1	0·4	4·04	0·20	25·9	0·7
Sept. 8	31·97	0·18	57·5	0·2	3·84	0·22	26·6	0·3
18	31·79	0·18	57·7	0·2	3·62	0·21	26·9	0·1
28	31·61	0·17	57·5	0·3	3·41	0·21	26·8	0·6
Oct. 8	31·44	0·16	57·2	0·6	3·20	0·20	26·2	0·9
18	31·28	0·13	56·6	1·0	3·00	0·16	25·3	1·3
28	31·15	0·09	55·6	1·3	2·84	0·13	24·0	1·7
Nov. 7	31·06	0·05	54·3	1·5	2·71	0·09	22·3	2·0
17	31·01	0·01	52·8	1·7	2·62	0·04	20·3	2·3
27	31·00	0·05	51·1	1·9	2·58	0·01	18·0	2·6
Dec. 7	31·05	0·10	49·2	2·3	2·59	0·06	15·4	2·8
17	31·15	0·14	46·9	2·2	{2·65 / 2·66}	0·11	{12·6 / 12·4}	2·8
27	31·29	0·18	44·7	2·1	2·77	0·16	9·6	2·8
37	28 31·47		39 42·6		41 2·93		48 6·8	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	σ Octantis.				γ Draconis.			
	R. A.		Dec. *South.*		R. A.		Dec. *North.*	
	h 17		° 89		h 17		° 51	
	m s	s	′ ″	″	m s	s	′ ″	″
Jan. 1	48 47·27	10·32	16 40·0	3·1	53 21·08	0·17	30 15·6	3·4
11	48 57·59	13·12	36·9	2·8	21·25	0·24	12·2	3·2
21	49 10·71	15·55	34·1	2·4	21·49	0·29	9·0	2·8
31	26·26	17·55	31·7	2·0	21·78	0·33	6·2	2·4
Feb. 10	49 43·81	19·07	29·7	1·5	22·11	0·36	3·8	1·9
20	50 2·88	20·14	28·2	1·0	22·47	0·39	1·9	1·3
Mar. 2	23·02	20·73	27·2	0·5	22·86	0·40	0·6	0·6
12	50 43·75	20·85	26·7	0·0	23·26	0·41	0·0	0·0
22	51 4·60	20·52	26·7	0·4	23·67	0·40	0·0	0·6
Apr. 1	25·12	19·77	27·1	0·9	24·07	0·38	0·6	1·2
11	51 44·89	18·61	28·0	1·4	24·45	0·36	1·8	1·8
21	52 3·50	17·07	29·4	1·8	24·81	0·32	3·6	2·3
May 1	20·57	15·21	31·2	2·1	25·13	0·29	5·9	2·7
11	35·78	13·01	33·3	2·4	25·42	0·24	8·6	3·1
21	48·79	10·54	35·7	2·7	25·66	0·19	11·7	3·2
31	52 59·33	7·84	38·4	2·9	25·85	0·13	14·9	3·3
June 10	53 7·17	4·98	41·3	3·0	25·98	0·07	18·2	3·4
20	12·15	2·00	44·3	3·0	26·05	0·02	21·6	3·3
30	14·15	1·02	47·3	3·0	26·07	0·05	24·9	3·1
July 10	13·13	3·99	50·3	2·9	26·02	0·10	28·0	2·9
20	9·14	6·84	53·2	2·6	25·92	0·16	30·9	2·6
30	53 2·30	9·48	55·8	2·3	25·76	0·22	33·5	2·3
Aug. 9	52 52·82	11·79	58·1	2·0	25·54	0·26	35·8	1·9
19	41·03	13·71	60·1	1·5	25·28	0·30	37·7	1·4
29	27·32	15·14	61·6	0·9	24·98	0·32	39·1	0·9
Sept. 8	52 12·18	16·00	62·5	0·3	24·66	0·34	40·0	0·5
18	51 56·18	16·27	62·8	0·2	24·32	0·34	40·5	0·0
28	39·91	15·88	62·6	0·8	23·98	0·34	40·5	0·6
Oct. 8	24·03	14·88	61·8	1·4	23·64	0·32	39·9	1·1
18	51 9·15	13·21	60·4	2·0	23·32	0·29	38·8	1·5
28	50 55·94	11·04	58·4	2·5	23·03	0·25	37·3	2·0
Nov. 7	44·90	8·33	55·9	2·8	22·78	0·20	35·3	2·5
17	36·57	5·28	53·1	3·1	22·58	0·14	32·8	2·9
27	31·29	1·96	50·0	3·4	22·44	0·07	29·9	3·1
Dec. 7	29·33	1·46	46·6	3·4	22·37	0·00	26·8	3·3
17	30·79	5·54	43·2	3·6	22·37	0·07	23·5	3·8
27	36·33	8·48	39·6	3·2	22·44	0·14	19·7	3·4
37	50 44·81		16 36·4		53 22·58		30 16·3	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	μ^2 Sagittarii.			α Lyræ. (*Vega*)			β Lyræ.		
	R. A.		Dec. *South.*	R. A.		Dec. *North.*	R. A.		Dec. *North.*
	h m s		° ′ ″	h m s		° ′ ″	h m s		° ′ ″
	18 5		21 5	18 32		38 39	18 44		33 11
	s	s	″	s	s	″	s	s	″
Jan. 1	26·71		32·6	12·78		19·0	55·88		68·8
		0·20			0·13			0·11	
11	26·91		32·8	12·91		15·9	55·99		65·9
		0·24			0·17			0·16	
21	27·15		32·9	13·08		13·0	56·15		63·1
		0·26			0·21			0·20	
31	27·41		33·1	13·29		10·3	56·35		60·6
		0·28			0·26			0·23	
Feb. 10	27·69		33·3	13·55		7·9	56·58		58·3
		0·30			0·28			0·27	
20	27·99		33·5	13·83		5·9	56·85		56·4
		0·32			0·31			0·29	
Mar. 2	28·31		33·5	14·14		4·4	57·14		54·9
		0·32			0·33			0·30	
12	28·63		33·5	14·47		3·5	57·44		54·0
		0·32			0·34			0·32	
22	28·95		33·4	14·81		3·2	57·76		53·7
		0·32			0·34			0·32	
Apr. 1	29·27		33·2	15·15		3·5	58·08		53·9
		0·32			0·34			0·33	
11	29·59		33·0	15·49		4·4	58·41		54·6
		0·30			0·32			0·32	
21	29·89		32·6	15·81		5·8	58·73		55·9
		0·29			0·31			0·30	
May 1	30·18		32·2	16·12		7·7	59·03		57·7
		0·28			0·29			0·28	
11	30·46		31·9	16·41		10·1	59·31		59·9
		0·26			0·26			0·26	
21	30·72		31·5	16·67		12·8	59·57		62·4
		0·22			0·22			0·23	
31	30·94		31·1	16·89		15·7	59·80		65·2
		0·20			0·18			0·20	
June 10	31·14		30·8	17·07		18·8	60·00		68·1
		0·16			0·14			0·15	
20	31·30		30·5	17·21		21·9	60·15		71·1
		0·11			0·09			0·11	
30	31·41		30·3	17·30		25·1	60·26		74·1
		0·08			0·04			0·07	
July 10	31·49		30·1	17·34		28·1	60·33		77·0
		0·03			0·01			0·01	
20	31·52		30·0	17·33		31·0	60·34		79·8
		0·02			0·06			0·04	
30	31·50		30·0	17·27		33·7	60·30		82·4
		0·06			0·11			0·08	
Aug. 9	31·44		30·0	17·16		36·1	60·22		84·8
		0·09			0·15			0·12	
19	31·35		30·0	17·01		38·2	60·10		86·8
		0·13			0·19			0·16	
29	31·22		30·0	16·82		39·9	59·94		88·5
		0·16			0·22			0·19	
Sept. 8	31·06		30·1	16·60		41·2	59·75		89·8
		0·17			0·24			0·22	
18	30·89		30·0	16·36		42·1	59·53		90·7
		0·18			0·26			0·23	
28	30·71		30·0	16·10		42·5	59·30		91·2
		0·18			0·26			0·23	
Oct. 8	30·53		29·9	15·84		42·4	59·07		91·3
		0·16			0·25			0·23	
18	30·37		29·7	15·59		41·9	58·84		90·9
		0·13			0·22			0·21	
28	30·24		29·5	15·37		40·9	58·63		90·1
		0·10			0·20			0·19	
Nov. 7	30·14		29·4	15·17		39·5	58·44		88·9
		0·07			0·16			0·15	
17	30·07		29·2	15·01		37·7	58·29		87·2
		0·02			0·12			0·11	
27	30·05		29·1	14·89		35·4	58·18		85·2
		0·04			0·07			0·06	
Dec. 7	30·09		29·0	14·82		32·8	58·12		82·8
		0·08			0 02			0·02	
17	30·17		29·0	14·80		30·0	58·10		80·2
		0·14			0·04			0·04	
27	30·31		29·1	14·84		27·0	58·14		77·5
		0·18			0·10			0·09	
37	30·49		29·2	14·94		23·6	58·23		74·3
						3·4			3·2

APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	ζ Aquilæ.				ω Aquilæ.				∂ Aquilæ.			
	R.A.		Dec. *North.*		R.A.		Dec. *North.*		R.A.		Dec. *North.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	18 59		13 39		19 11		11 20		19 18		2 50	
Jan. 1		0·63		32·4		16·99		48·5		28·93		24·0
		0·12		2·2		0·12		2·0		0·11		1·4
11		0·75		30·2		17·11		46·5		29·04		22·6
		0·15		1·9		0·14		1·8		0·14		1·3
21		0·90		28·3		17·25		44·7		29·18		21·3
		0·19		1·8		0·17		1·6		0·18		1·2
31		1·09		26·5		17·42		43·1		29·36		20·1
		0·21		1·5		0·20		1·5		0·20		1·0
Feb. 10		1·30		25·0		17·62		41·6		29·56		19·1
		0·24		1·3		0·23		1·2		0·22		0·8
20		1·54		23·7		17·85		40·4		29·78		18·3
		0·26		1·0		0·25		0·9		0·25		0·6
Mar. 2		1·80		22·7		18·10		39·5		30·03		17·7
		0·27		0·5		0·27		0·5		0·27		0·2
12		2·07		22·2		18·37		39·0		30·30		17·5
		0·29		0·2		0·28		0·1		0·28		0·0
22		2·36		22·0		18·65		38·9		30·58		17·5
		0·29		0·3		0·30		0·3		0·29		0·4
Apr. 1		2·65		22·3		18·95		39·2		30·87		17·9
		0·30		0·7		0·29		0·7		0·29		0·7
11		2·95		23·0		19·24		39·9		31·16		18·6
		0·29		1·1		0·30		1·1		0·30		1·1
21		3·24		24·1		19·54		41·0		31·46		19·7
		0·29		1·5		0·29		1·4		0·30		1·3
May 1		3·53		25·6		19·83		42·4		31·76		21·0
		0·28		1·7		0·28		1·7		0·28		1·5
11		3·81		27·3		20·11		44·1		32·04		22·5
		0·26		2·0		0·27		1·9		0·27		1·6
21		4·07		29·3		20·38		46·0		32·31		24·1
		0·24		2·2		0·25		2·1		0·26		1·8
31		4·31		31·5		20·63		48·1		32·57		25·9
		0·21		2·2		0·21		2·2		0·23		1·9
June 10		4·52		33·7		20·84		50·3		32·80		27·8
		0·17		2·3		0·19		2·2		0·20		1·8
20		4·69		36·0		21·03		52·5		33·00		29·6
		0·14		2·3		0·15		2·1		0·16		1·8
30		4·83		38·3		21·18		54·6		33·16		31·4
		0·10		2·2		0·11		2·1		0·12		1·7
July 10		4·93		40·5		21·29		56·7		33·28		33·1
		0·05		2·0		0·07		2·0		0·08		1·6
20		4·98		42·5		21·36		58·7		33·36		34·7
		0·01		1·9		0·02		1·9		0·04		1·4
30		4·99		44·4		21·38		60·6		33·40		36·1
		0·04		1·7		0·02		1·6		0·00		1·3
Aug. 9		4·95		46·1		21·36		62·2		33·40		37·4
		0·07		1·4		0·06		1·4		0·05		1·0
19		4·88		47·5		21·30		63·6		33·35		38·4
		0·11		1·2		0·10		1·2		0·09		0·9
29		4·77		48·7		21·20		64·8		33·26		39·3
		0·14		1·0		0·13		0·9		0·12		0·6
Sept. 8		4·63		49·7		21·07		65·7		33·14		39·9
		0·16		0·6		0·16		0·7		0·14		0·5
18		4·47		50·3		20·91		66·4		33·00		40·4
		0·18		0·4		0·17		0·4		0·16		0·2
28		4·29		50·7		20·74		66·8		32·84		40·6
		0·19		0·1		0·18		0·1		0·17		0·1
Oct. 8		4·10		50·8		20·56		66·9		32·67		40·7
		0·18		0·3		0·17		0·2		0·17		0·1
18		3·92		50·5		20·39		66·7		32·50		40·6
		0·16		0·5		0·16		0·4		0·15		0·4
28		3·76		50·0		20·23		66·3		32·35		40·2
		0·14		0·8		0·15		0·7		0·14		0·5
Nov. 7		3·62		49·2		20·08		65·6		32·21		39·7
		0·12		1·1		0·12		1·0		0·12		0·7
17		3·50		48·1		19·96		64·6		32·09		39·0
		0·08		1·3		0·08		1·2		0·08		0·9
27		3·42		46·8		19·88		63·4		32·01		38·1
		0·04		1·6		0·05		1·4		0·04		1·1
Dec. 7		3·38		45·2		19·83		62·0		31·97		37·0
		0·01		1·8		0·00		1·6		0·00		1·2
17		3·39		43·4		19·83		60·4		31·97		35·8
		0·04		1·9		0·04		1·8		0·04		1·2
27		3·43		41·5		19·87		58·6		32·01		34·6
		0·10		2·1		0·07		1·8		0·08		1·3
37		3·53		39·4	{19·24 / 19·25}		{56·8 / 56·6}		32·09		33·3	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	h^2 Sagittarii.				γ Aquilæ.				α Aquilæ. (*Altair*)			
	R. A.		Dec. *South.*		R. A.		Dec. *North.*		R. A.		Dec. *North.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	19 28		25 11		19 39		10 16		19 43		8 30	
Jan. 1		14·31		14·8		38·56		37·2		59·60		13·6
			0·13				0·08				0·07	
11		14·44		14·3		38·64		35·5		59·67		12·0
			0·16				0·12				0·12	
21		14·60		13·9		38·76		33·7		59·79		10·3
			0·19				0·15				0·15	
31		14·79		13·4		38·91		32·2		59·94		8·9
			0·22				0·18				0·18	
				0·6				1·4				1·3
Feb. 10		15·01		12·8		39·09		30·8		60·12		7·6
			0·25				0·21				0·20	
20		15·26		12·3		39·30		29·6		60·32		6·6
			0·27				0·23				0·23	
Mar. 2		15·53		11·6		39·53		28·8		60·55		5·8
			0·30				0·25				0·25	
12		15·83		10·9		39·78		28·3		60·80		5·4
			0·31				0·27				0·27	
				0·8				0·1				0·1
22		16·14		10·1		40·05		28·2		61·07		5·3
			0·32				0·28				0·28	
Apr. 1		16·46		9·3		40·33		28·5		61·35		5·6
			0·33				0·30				0·29	
11		16·79		8·4		40·63		29·1		61·64		6·3
			0·33				0·30				0·30	
21		17·12		7·6		40·93		30·2		61·94		7·4
			0·33				0·30				0·30	
				0·9				1·3				1·4
May 1		17·45		6·7		41·23		31·5		62·24		8·8
			0·33				0·29				0·30	
11		17·78		5·8		41·52		33·2		62·54		10·4
			0·31				0·28				0·29	
21		18·09		5·1		41·80		35·1		62·83		12·2
			0·30				0·27				0·26	
31		18·39		4·4		42·07		37·1		63·09		14·2
			0·27				0·24				0·25	
				0·6				2·2				2·2
June 10		18·66		3·8		42·31		39·3		63·34		16·4
			0·24				0·21				0·22	
20		18·90		3·4		42·52		41·5		63·56		18·5
			0·20				0·18				0·18	
30		19·10		3·1		42·70		43·7		63·74		20·7
			0·16				0·13				0·14	
July 10		19·26		3·0		42·83		45·8		63·88		22·7
			0·11				0·10				0·10	
				0·0				2·0				2·0
20		19·37		3·0		42·93		47·8		63·98		24·7
			0·06				0·05				0·06	
30		19·43		3·2		42·98		49·7		64·04		26·5
			0·01				0·00				0·01	
Aug. 9		19·44		3·4		42·98		51·4		64·05		28·1
			0·03				0·03				0·03	
19		19·41		3·7		42·95		52·9		64·02		29·5
			0·08				0·08				0·07	
				0·4				1·2				1·2
29		19·33		4·1		42·87		54·1		63·95		30·7
			0·12				0·11				0·11	
Sept. 8		19·21		4·5		42·76		55·1		63·84		31·7
			0·14				0·14				0·13	
18		19·07		4·9		42·62		55·9		63·71		32·4
			0·17				0·16				0·15	
28		18·90		5·2		42·46		56·3		63·56		32·8
			0·18				0·17				0·17	
				0·2				0·2				0·2
Oct. 8		18·72		5·4		42·29		56·5		63·39		33·0
			0·19				0·17				0·17	
18		18·53		5·6		42·12		56·5		63·22		33·0
			0·17				0·17				0·16	
28		18·36		5·7		41·95		56·2		63·06		32·7
			0·15				0·15				0·15	
Nov. 7		18·21		5·7		41·80		55·7		62·91		32·2
			0·12				0·13				0·13	
				0·1				0·8				0·8
17		18·09		5·6		41·67		54·9		62·78		31·4
			0·09				0·09				0·10	
27		18·00		5·4		41·58		53·8		62·68		30·4
			0·04				0·07				0·06	
Dec. 7		17·96		5·1		41·51		52·5		62·62		29·3
			0·00				0·03				0·03	
17		17·96		4·8		41·48		51·0		62·59		28·0
			0·04				0·02				0·01	
				0·4				1·5				1·5
27		18·00		4·4		41·50		49·5		62·60		26·5
			0·09				0·05				0·06	
37		18·09		4·0		41·55		47·8		62·66		24·9
				0·4				1·7				1·6

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	β Aquilæ. R.A.		Dec. North.		λ Ursæ Minoris. R.A.		Dec. North.	
	h 19		° 6		h 20		° 88	
	m s	s	′ ″	″	m s	s	′ ″	″
Jan. 1	48 28·66	0·08	3 43·3	1·5	1 28·27	4·73	53 42·6	2·9
11	28·74	0·12	41·8	1·5	23·54	2·65	39·7	3·5
21	28·86	0·14	40·3	1·3	20·89	0·04	36·2	3·2
31	29·00		39·0		20·85		33·0	
		0·17		1·2		2·21		3·1
Feb. 10	29·17		37·8		23·06		29·9	
20	29·37	0·20	36·9	0·9	27·40	4·34	27·0	2·9
Mar. 2	29·59	0·22	36·2	0·7	33·67	6·27	24·4	2·6
12	29·84	0·25	35·9	0·3	41·61	7·94	22·3	2·1
		0·26		0·0		9·26		1·7
22	30·10		35·9		1 50·87		20·6	
Apr. 1	30·38	0·28	36·2	0·3	2 1·04	10·17	19·5	1·1
11	30·68	0·30	36·9	0·7	11·76	10·72	19·0	0·5
21	30·98	0·30	37·9	1·0	22·59	10·83	19·2	0·2
		0·30		1·3		10·54		0·7
May 1	31·28		39·2		33·13		19·9	
11	31·57	0·29	40·8	1·6	43·04	9·91	21·2	1·3
21	31·86	0·29	42·6	1·8	51·95	8·91	23·0	1·8
31	32·13	0·27	44·5	1·9	2 59·60	7·65	25·3	2·3
		0·25		2·0		6·18		2·7
June 10	32·38		46·5		3 5·78		28·0	
20	32·60	0·22	48·5	2·0	10·29	4·51	31·0	3·0
30	32·78	0·18	50·6	2·1	13·00	2·71	34·3	3·3
July 10	32·93	0·15	52·5	1·9	13·90	0·90	37·7	3·4
		0·11		1·8		0·97		3·5
20	33·04		54·3		12·93		41·2	
30	33·10	0·06	56·0	1·7	10·11	2·82	44·6	3·4
Aug. 9	33·12	0·02	57·5	1·5	3 5·53	4·58	48·0	3·4
19	33·09	0·03	58·7	1·2	2 59·27	6·26	51·3	3·3
		0·06		1·1		7·81		3·0
29	33·03		59·8		51·46		54·3	
Sept. 8	32·93	0·10	60·6	0·8	42·27	9·19	57·0	2·7
18	32·80	0·13	61·2	0·6	31·88	10·39	53 59·4	2·4
28	32·64	0·16	61·6	0·4	20·48	11·40	54 1·4	2·0
		0·17		0·2		12·16		1·6
Oct. 8	32·47		61·8		2 8·32		3·0	
18	32·31	0·16	61·7	0·1	1 55·65	12·67	4·1	1·1
28	32·15	0·16	61·4	0·3	42·75	12·90	4·6	0·5
Nov. 7	32·00	0·15	60·9	0·5	29·92	12·83	4·7	0·1
		0·13		0·7		12·44		0·5
17	31·87		60·2		17·48		4·2	
27	31·78	0·09	59·3	0·9	1 5·76	11·72	3·1	1·1
Dec. 7	31·71	0·07	58·2	1·1	0 55·09	10·67	54 1·5	1·6
17	31·68	0·03	56·9	1·3	45·80	9·29	53 59·5	2·0
		0·01		1·3		7·61		2·4
27	31·69		55·6		38·19		57·1	
37	48 31·74	0·05	3 54·2	1·4	0 32·51	5·68	53 54·2	2·9

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α^2 Capricorni.				α Pavonis.				ρ Capricorni.			
	R. A.		Dec. *South.*		R. A.		Dec. *South.*		R. A.		Dec. *South.*	
	h m		° ′		h m		° ′		h m		° ′	
	20 10		12 58		20 14		57 10		20 20		18 15	
	s		″		s		″		s		″	
Jan. 1	20·12	0·07	25·0	0·2	37·44	0·06	40·3	2·3	55·40	0·06	75·7	0·1
11	20·19	0·10	25·2	0·2	37·50	0·14	38·0	2·7	55·46	0·09	75·6	0·1
21	20·29	0·13	25·4	0·1	37·64	0·20	35·3	2·5	55·55	0·12	75·5	0·3
31	20·42		25·5		37·84		32·8		55·67		75·2	
		0·16		0·0		0·27		2·5		0·16		0·4
Feb. 10	20·58	0·20	25·5	0·1	38·11	0·31	30·3	2·4	55·83	0·20	74·8	0·5
20	20·78	0·22	25·4	0·3	38·42	0·36	27·9	2·3	56·03	0·22	74·3	0·6
Mar. 2	21·00	0·24	25·1	0·5	38·78	0·41	25·6	2·2	56·25	0·24	73·7	0·7
12	21·24		24·6		39·19		23·4		56·49		73·0	
		0·27		0·7		0·45		2·0		0·26		0·9
22	21·51	0·28	23·9	0·8	39·64	0·47	21·4	1·8	56·75	0·29	72·1	1·1
Apr. 1	21·79	0·29	23·1	1·0	40·11	0·50	19·6	1·4	57·04	0·30	71·0	1·1
11	22·08	0·31	22·1	1·2	40·61	0·52	18·2	1·2	57·34	0·31	69·9	1·2
21	22·39		20·9		41·13		17·0		57·65		68·7	
		0·31		1·3		0·52		0·9		0·32		1·3
May 1	22·70	0·32	19·6	1·3	41·65	0·52	16·1	0·6	57·97	0·33	67·4	1·4
11	23·02	0·31	18·3	1·4	42·17	0·50	15·5	0·2	58·30	0·32	66·0	1·3
21	23·33	0·29	16·9	1·4	42·67	0·49	15·3	0·1	58·62	0·31	64·7	1·3
31	23·62		15·5		43·16		15·4		58·93		63·4	
		0·28		1·3		0·46		0·5		0·29		1·1
June 10	23·90	0·25	14·2	1·3	43·62	0·41	15·9	0·8	59·22	0·26	62·3	1·1
20	24·15	0·22	12·9	1·1	44·03	0·36	16·7	1·1	59·48	0·23	61·2	0·9
30	24·37	0·19	11·8	1·0	44·39	0·29	17·8	1·4	59·71	0·20	60·3	0·7
July 10	24·56		10·8		44·68		19·2		59·91		59·6	
		0·14		0·8		0·22		1·5		0·16		0·6
20	24·70	0·09	10·0	0·7	44·90	0·14	20·7	1·8	60·07	0·11	59·0	0·4
30	24·79	0·05	9·3	0·5	45·04	0·07	22·5	2·0	60·18	0·06	58·6	0·2
Aug. 9	24·84	0·00	8·8	0·3	45·11	0·02	24·5	1·9	60·24	0·01	58·4	0·0
19	24·84		8·5		45·09		26·4		60·25		58·4	
		0·04		0·2		0·09		1·9		0·03		0·1
29	24·80	0·08	8·3	0·0	45·00	0·16	28·3	1·8	60·22	0·07	58·5	0·2
Sept. 8	24·72	0·11	8·3	0·1	44·84	0·22	30·1	1·6	60·15	0·11	58·7	0·3
18	24·61	0·14	8·4	0·1	44·62	0·27	31·7	1·3	60·04	0·14	59·0	0·4
28	24·47		8·5		44·35		33·0		59·90		59·4	
		0·15		0·2		0·31		1·0		0·15		0·3
Oct. 8	24·32	0·16	8·7	0·3	44·04	0·33	34·0	0·6	59·75	0·16	59·7	0·4
18	24·16	0·17	9·0	0·3	43·71	0·32	34·6	0·2	59·59	0·17	60·1	0·3
28	23·99	0·15	9·3	0·3	43·39	0·31	34·8	0·2	59·42	0·16	60·4	0·3
Nov. 7	23·84		9·6		43·08		34·6		59·26		60·7	
		0·13		0·3		0·28		0·7		0·13		0·3
17	23·71	0·10	9·9	0·3	42·80	0·24	33·9	1·1	59·13	0·11	61·0	0·2
27	23·61	0·07	10·2	0·3	42·56	0·18	32·8	1·4	59·02	0·09	61·2	0·1
Dec. 7	23·54	0·04	10·5	0·4	42·38	0·12	31·4	1·8	58·93	0·04	61·3	0·1
17	23·50		10·9		42·26		29·6		58·89		61·4	
		0·01		0·3		0·05		2·0		0·00		0·0
27	23·51	0·04	11·2	0·3	42·21	0·02	27·6	2·3	58·89	0·02	61·4	0·1
37	23·55		11·5		42·23		25·3		58·91		61·3	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Cygni.				32 Vulpeculæ.				61¹ Cygni.			
	R. A.		Dec. North.		R. A.		Dec. North.		R. A.		Dec. North.	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	20 36		44 46		20 48		27 31		21 0		38 3	
Jan. 1		40·43		74·3		37·62		56·6		39·11		72·2
				2·8				2·2				2·2
11		40·38		71·5		37·61		54·4		39·07		70·0
		0·01		2·8		0·03		2·2		0·00		2·5
21		40·39		68·7		37·64		52·2		39·07		67·5
		0·07		3·2		0·07		2·5		0·05		2·6
31		40·46		65·5		37·71		49·7		39·12		64·9
		0·11		2·8		0·10		2·1		0·10		2·7
Feb. 10		40·57		62·7		37·81		47·6		39·22		62·2
		0·16		2·7		0·14		2·0		0·14		2·4
20		40·73		60·0		37·95		45·6		39·36		59·8
		0·21		2·3		0·18		1·7		0·19		2·0
Mar. 2		40·94		57·7		38·13		43·9		39·55		57·8
		0·26		1·8		0·21		1·3		0·22		1·7
12		41·20		55·9		38·34		42·6		39·77		56·1
		0·29		1·4		0·24		0·8		0·26		1·2
22		41·49		54·5		38·58		41·8		40·03		54·9
		0·33		0·8		0·27		0·4		0·29		0·7
Apr. 1		41·82		53·7		38·85		41·4		40·32		54·2
		0·35		0·3		0·30		0·1		0·32		0·2
11		42·17		53·4		39·15		41·5		40·64		54·0
		0·37		0·4		0·31		0·5		0·35		0·3
21		42·54		53·8		39·46		42·0		40·99		54·3
		0·37		0·9		0·32		1·1		0·36		0·9
May 1		42·91		54·7		39·78		43·1		41·35		55·2
		0·38		1·5		0·32		1·5		0·37		1·5
11		43·29		56·2		40·10		44·6		41·72		56·7
		0·37		2·0		0·33		1·9		0·36		1·9
21		43·66		58·2		40·43		46·5		42·08		58·6
		0·35		2·4		0·32		2·3		0·35		2·3
31		44·01		60·6		40·75		48·8		42·43		60·9
		0·32		2·7		0·29		2·6		0·33		2·6
June 10		44·33		63·3		41·04		51·4		42·76		63·5
		0·28		3·1		0·26		2·7		0·30		3·0
20		44·61		66·4		41·30		54·1		43·06		66·5
		0·24		3·3		0·24		2·8		0·27		3·2
30		44·85		69·7		41·54		56·9		43·33		69·7
		0·20		3·4		0·20		2·9		0·22		3·3
July 10		45·05		73·1		41·74		59·8		43·55		73·0
		0·14		3·4		0·15		3·0		0·18		3·4
20		45·19		76·5		41·89		62·8		43·73		76·4
		0·08		3·4		0·11		2·8		0·12		3·3
30		45·27		79·9		42·00		65·6		43·85		79·7
		0·02		3·3		0·06		2·7		0·08		3·2
Aug. 9		45·29		83·2		42·06		68·3		43·93		82·9
		0·03		3·1		0·01		2·5		0·02		3·1
19		45·26		86·3		42·07		70·8		43·95		86·0
		0·09		2·8		0·04		2·3		0·03		2·9
29		45·17		89·1		42·03		73·1		43·92		88·9
		0·14		2·6		0·08		2·0		0·08		2·6
Sept. 8		45·03		91·7		41·95		75·1		43·84		91·5
		0·18		2·2		0·11		1·7		0·12		2·1
18		44·85		93·9		41·84		76·8		43·72		93·7
		0·21		1·8		0·14		1·4		0·15		1·9
28		44·64		95·7		41·70		78·2		43·57		95·6
		0·24		1·4		0·17		1·0		0·18		1·6
Oct. 8		44·40		97·1		41·53		79·2		43·39		97·2
		0·25		1·0		0·18		0·7		0·20		1·1
18		44·15		98·1		41·35		79·9		43·19		98·3
		0·26		0·4		0·19		0·2		0·21		0·6
28		43·89		98·5		41·16		80·1		42·98		98·9
		0·26		0·0		0·18		0·1		0·21		0·2
Nov. 7		43·63		98·5		40·98		80·0		42·77		99·1
		0·25		0·6		0·17		0·6		0·20		0·2
17		43·38		97·9		40·81		79·4		42·57		98·9
		0·22		1·1		0·16		0·9		0·18		0·7
27		43·16		96·8		40·65		78·5		42·39		98·2
		0·19		1·5		0·14		1·3		0·16		1·3
Dec. 7		42·97		95·3		40·51		77·2		42·23		97·0
		0·16		2·0		0·10		1·6		0·13		1·6
17		42·81		93·3		40·41		75·6		42·10		95·4
		0·11		2·3		0·07		1·8		0·10		2·0
27		42·70		91·0		40·34		73·8		42·00		93·4
		0·08		2·6		0·04		2·1		0·06		2·2
37		42·62		88·4		40·30		71·7		41·94		91·2

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	ζ Cygni.			α Cephei.			β Aquarii.		
	R.A.		Dec. *North.*	R.A.		Dec. *North.*	R.A.		Dec. *South.*
	h m	s	° ′ ″	h m	s	° ′ ″	h m	s	° ′ ″
	21 7		29 39	21 15		61 59	21 24		6 10
		s	″		s	″		s	″
Jan. 1		0·70	37·4		13·46	63·7		14·29	50·4
		0·03	2·1		0·19	2·7		0·01	0·5
11		0·67	35·3		13·27	61·0		14·28	50·9
		0·00	2·3		0·13	2·9		0·02	0·5
21		0·67	33·0		13·14	58·1		14·30	51·4
		0·04	2·3		0·05	3·1		0·05	0·4
31		0·71	30·7		13·09	55·0		14·35	51·8
		0·09	2·5		0·04	3·5		0·09	0·2
Feb. 10		0·80	28·2		13·13	51·5		14·44	52·0
		0·12	2·0		0·13	3·1		0·12	0·1
20		0·92	26·2		13·26	48·4		14·56	52·1
		0·16	1·8		0·20	2·9		0·14	0·2
Mar. 2		1·08	24·4		13·46	45·5		14·70	51·9
		0·20	1·5		0·28	2·5		0·18	0·3
12		1·28	22·9		13·74	43·0		14·88	51·6
		0·24	1·0		0·35	2·1		0·21	0·6
22		1·52	21·9		14·09	40·9		15·09	51·0
		0·26	0·6		0·42	1·6		0·23	0·9
Apr. 1		1·78	21·3		14·51	39·3		15·32	50·1
		0·28	0·0		0·46	1·0		0·25	1·0
11		2·06	21·3		14·97	38·3		15·57	49·1
		0·31	0·4		0·50	0·4		0·28	1·3
21		2·37	21·7		15·47	37·9		15·85	47·8
		0·32	0·9		0·52	0·2		0·30	1·5
May 1		2·69	22·6		15·99	38·1		16·15	46·3
		0·34	1·4		0·53	0·8		0·30	1·7
11		3·03	24·0		16·52	38·9		16·45	44·6
		0·33	1·8		0·53	1·4		0·31	1·7
21		3·36	25·8		17·05	40·3		16·76	42·9
		0·33	2·2		0·51	2·0		0·32	1·8
31		3·69	28·0		17·56	42·3		17·08	41·1
		0·31	2·5		0·47	2·5		0·31	1·9
June 10		4·00	30·5		18·03	44·8		17·39	39·2
		0·28	2·7		0·42	2·8		0·28	1·8
20		4·28	33·2		18·45	47·6		17·67	37·4
		0·25	2·9		0·36	3·2		0·27	1·7
30		4·53	36·1		18·81	50·8		17·94	35·7
		0·22	3·0		0·30	3·5		0·24	1·6
July 10		4·75	39·1		19·11	54·3		18·18	34·1
		0·17	3·0		0·22	3·6		0·19	1·4
20		4·92	42·1		19·33	57·9		18·37	32·7
		0·13	2·9		0·14	3·7		0·16	1·2
30		5·05	45·0		19·47	61·6		18·53	31·5
		0·08	2·8		0·07	3·7		0·12	1·0
Aug. 9		5·13	47·8		19·54	65·3		18·65	30·5
		0·03	2·7		0·02	3·6		0·07	0·9
19		5·16	50·5		19·52	68·9		18·72	29·6
		0·02	2·4		0·10	3·5		0·02	0·7
29		5·14	52·9		19·42	72·4		18·74	28·9
		0·06	2·2		0·17	3·3		0·02	0·3
Sept. 8		5·08	55·1		19·25	75·7		18·72	28·6
		0·10	1·9		0·24	3·0		0·05	0·2
18		4·98	57·0		19·01	78·7		18·67	28·4
		0·14	1·6		0·29	2·6		0·09	0·1
28		4·84	58·6		18·72	81·3		18·58	28·3
		0·16	1·2		0·34	2·2		0·12	0·1
Oct. 8		4·68	59·8		18·38	83·5		18·46	28·4
		0·17	0·8		0·38	1·8		0·13	0·3
18		4·51	60·6		18·00	85·3		18·33	28·7
		0·19	0·5		0·40	1·2		0·14	0·3
28		4·32	61·1		17·60	86·5		18·19	29·0
		0·19	0·0		0·42	0·7		0·14	0·4
Nov. 7		4·13	61·1		17·18	87·2		18·05	29·4
		0·18	0·4		0·42	0·2		0·14	0·5
17		3·95	60·7		16·76	87·4		17·91	29·9
		0·16	0·8		0·40	0·4		0·12	0·5
27		3·79	59·9		16·36	87·0		17·79	30·4
		0·14	1·1		0·37	1·0		0·11	0·6
Dec. 7		3·65	58·8		15·99	86·0		17·68	31·0
		0·11	1·5		0·34	1·6		0·08	0·6
17		3·54	57·3		15·65	84·4		17·60	31·6
		0·09	1·8		0·29	2·0		0·06	0·6
27		3·45	55·5		15·36	82·4		17·54	32·2
		0·06	2·1		0·23	2·4		0·02	0·5
37		3·39	53·4		15·13	80·0		17·52	32·7

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	β Cephei.		ε Pegasi.		16 Pegasi.	
	R. A.	Dec. *North.*	R. A.	Dec. *North.*	R. A.	Dec. *North.*
	h m	° ′	h m	° ′	h m	° ′
	21 26	69 56	21 37	9 14	21 46	25 16
	s	″ ″	s	″ ″	s	″ ″
Jan. 1	48·00	78·1	21·45	26·0	44·10	29·3
		2·5		1·2		1·8
11	47·66	75·6	21·42	24·8	44·04	27·5
	0·24	2·9	0·00	1·3	0·02	1·9
21	47·42	72·7	21·42	23·5	44·02	25·6
	0·13	3·1	0·03	1·2	0·00	2·0
31	47·29	69·6	21·45	22·3	44·02	23·6
	0·02	3·5	0·06	1·1	0·04	1·9
Feb. 10	47·27	66·1	{21·51 / 21·55}	{21·1 / 21·1}	44·06	21·7
	0·09	3·2	0·09	0·9	0·09	2·0
20	47·36	62·9	21·61	20·2	44·15	19·7
	0·22	3·0	0·13	0·8	0·11	1·6
Mar. 2	47·58	59·9	21·74	19·4	44·26	18·1
	0·33	2·7	0·16	0·5	0·15	1·3
12	47·91	57·2	21·90	18·9	44·41	16·8
	0·44	2·4	0·19	0·2	0·19	1·0
22	48·35	54·8	22·09	18·7	44·60	15·8
	0·52	1·9	0·23	0·2	0·23	0·6
Apr. 1	48·87	52·9	22·32	18·9	44·83	15·2
	0·59	1·3	0·25	0·5	0·26	0·1
11	49·46	51·6	22·57	19·4	45·09	15·1
	0·64	0·7	0·27	0·9	0·29	0·3
21	50·10	50·9	22·84	20·3	45·38	15·4
	0·68	0·0	0·29	1·2	0·30	0·8
May 1	50·78	50·9	23·13	21·5	45·68	16·2
	0·70	0·5	0·30	1·5	0·32	1·2
11	51·48	51·4	23·43	23·0	46·00	17·4
	0·69	1·2	0·32	1·8	0·33	1·6
21	52·17	52·6	23·75	24·8	46·33	19·0
	0·66	1·7	0·31	1·9	0·34	2·0
31	52·83	54·3	24·06	26·7	46·67	21·0
	0·62	2·2	0·30	2·2	0·32	2·3
June 10	53·45	56·5	24·36	28·9	46·99	23·3
	0·55	2·7	0·29	2·3	0·30	2·5
20	54·00	59·2	24·65	31·2	47·29	25·8
	0·48	3·1	0·27	2·2	0·28	2·7
30	54·48	62·3	24·92	33·4	47·57	28·5
	0·39	3·3	0·24	2·3	0·25	2·7
July 10	54·87	65·6	25·16	35·7	47·82	31·2
	0·29	3·6	0·20	2·2	0·21	2·8
20	55·16	69·2	25·36	37·9	48·03	34·0
	0·19	3·7	0·16	2·1	0·17	2·8
30	55·35	72·9	25·52	40·0	48·20	36·8
	0·08	3·8	0·12	1·9	0·13	2·7
Aug. 9	55·43	76·7	25·64	41·9	48·33	39·5
	0·02	3·8	0·08	1·7	0·07	2·6
19	55·41	80·5	25·72	43·6	48·40	42·1
	0·13	3·6	0·03	1·5	0·03	2·3
29	55·28	84·1	25·75	45·1	48·43	44·4
	0·22	3·5	0·01	1·3	0·01	2·2
Sept. 8	55·06	87·6	25·74	46·4	48·42	46·6
	0·32	3·2	0·05	1·0	0·05	1·9
18	54·74	90·8	25·69	47·4	48·37	48·5
	0·40	2·8	0·08	0·8	0·09	1·6
28	54·34	93·6	25·61	48·2	48·28	50·1
	0·47	2·5	0·11	0·6	0·12	1·2
Oct. 8	53·87	96·1	25·50	48·8	48·16	51·3
	0·52	2·1	0·13	0·3	0·14	0·9
18	53·35	98·2	25·37	49·1	48·02	52·2
	0·56	1·6	0·14	0·1	0·15	0·6
28	52·79	99·8	25·23	49·2	47·87	52·8
	0·59	1·0	0·14	0·2	0·16	0·3
Nov. 7	52·20	100·8	25·09	49·0	47·71	53·1
	0·60	0·5	0·14	0·4	0·17	0·1
17	51·60	101·3	24·95	48·6	47·54	53·0
	0·59	0·1	0·13	0·6	0·15	0·5
27	51·01	101·2	24·82	48·0	47·39	52·5
	0·57	0·7	0·11	0·8	0·14	0·9
Dec. 7	50·44	100·5	24·71	47·2	47·25	51·6
	0·52	1·3	0·10	0·9	0·12	1·1
17	49·92	99·2	24·61	46·3	47·13	50·5
	0·46	1·9	0·07	1·1	0·10	1·5
27	49·46	97·3	24·54	45·2	47·03	49·0
	0·38	2·3	0·04	1·2	0·08	1·7
37	49·08	95·0	24·50	44·0	46·95	47·3

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Aquarii.			α Gruis.			θ Aquarii.		
	R. A.		Dec. *South.*	R. A.		Dec. *South.*	R. A.		Dec. *South.*
	h m	s	° ′ ″	h m	s	° ′ ″	h m	s	° ′ ″
	21 58	38·65	0 59 35·4	21 59	27·52	47 37 63·1	22 9	29·99	8 28 25·8
Jan. 1		0·04	0·8		0·08	1·5		0·06	0·4
11		38·61	36·2		27·44	61·6		29·93	26·2
		0·01	0·7		0·04	1·8		0·02	0·3
21		38·60	36·9		27·40	59·8		29·91	26·5
		0·02	0·6		0·00	2·1		0·01	0·1
31		38·62	37·5		27·40	57·7		29·92	26·6
		0·04	0·5		0·05	2·3		0·04	0·0
Feb. 10		38·66	38·0		27·45	55·4		29·96	26·6
		0·08	0·3		0·11	2·7		0·07	0·1
20		38·74	38·3		27·56	52·7		30·03	26·5
		0·11	0·1		0·15	2·5		0·10	0·3
Mar. 2		38·85	38·4		27·71	50·2		30·13	26·2
		0·14	0·1		0·19	2·6		0·14	0·3
12		38·99	38·3		27·90	47·6		30·27	25·6
		0·18	0·3		0·24	2·7		0·16	0·6
22		39·17	38·0		28·14	44·9		30·43	24·8
		0·20	0·7		0·28	2·6		0·20	1·1
Apr. 1		39·37	37·3		28·42	42·3		30·63	23·7
		0·23	0·9		0·32	2·5		0·23	1·2
11		39·60	36·4		28·74	39·8		30·86	22·5
		0·26	1·2		0·35	2·4		0·25	1·5
21		39·86	35·2		29·09	37·4		31·11	21·0
		0·29	1·4		0·38	2·1		0·28	1·6
May 1		40·15	33·8		29·47	35·3		31·39	19·4
		0·30	1·7		0·41	2·0		0·30	1·7
11		40·45	32·1		29·88	33·3		31·69	17·7
		0·31	1·8		0·42	1·7		0·31	1·9
21		40·76	30·3		30·30	31·6		32·00	15·8
		0·31	1·9		0·43	1·3		0·32	1·9
31		41·07	28·4		30·73	30·3		32·32	13·9
		0·31	2·0		0·43	1·0		0·32	1·9
June 10		41·38	26·4		31·16	29·3		32·64	12·0
		0·30	2·0		0·41	0·7		0·31	1·9
20		41·68	24·4		31·57	28·6		32·95	10·1
		0·28	2·0		0·38	0·2		0·29	1·8
30		41·96	22·4		31·95	28·4		33·24	8·3
		0·26	1·9		0·35	0·1		0·27	1·6
July 10		42·22	20·5		32·30	28·5		33·51	6·7
		0·22	1·7		0·31	0·6		0·24	1·4
20		42·44	18·8		32·61	29·1		33·75	5·3
		0·19	1·6		0·26	0·9		0·19	1·2
30		42·63	17·2		32·87	30·0		33·94	4·1
		0·14	1·4		0·20	1·2		0·16	1·0
Aug. 9		42·77	15·8		33·07	31·2		34·10	3·1
		0·10	1·2		0·14	1·5		0·11	0·8
19		42·87	14·6		33·21	32·7		34·21	2·3
		0·06	0·9		0·07	1·7		0·07	0·5
29		42·93	13·7		33·28	34·4		34·28	1·8
		0·01	0·8		0·01	1·7		0·03	0·3
Sept. 8		42·94	12·9		33·29	36·1		34·31	1·5
		0·03	0·5		0·06	1·9		0·02	0·1
18		42·91	12·4		33·23	38·0		34·29	1·4
		0·06	0·3		0·11	1·9		0·05	0·1
28		42·85	12·1		33·12	39·9		34·24	1·5
		0·09	0·1		0·16	1·7		0·08	0·2
Oct. 8		42·76	12·0		32·96	41·6		34·16	1·7
		0·11	0·1		0·19	1·5		0·10	0·4
18		42·65	12·1		32·77	43·1		34·06	2·1
		0·12	0·2		0·21	1·3		0·12	0·5
28		42·53	12·3		32·56	44·4		33·94	2·6
		0·13	0·3		0·23	1·0		0·13	0·5
Nov. 7		42·40	12·6		32·33	45·4		33·81	3·1
		0·14	0·5		0·24	0·7		0·14	0·6
17		42·26	13·1		32·09	46·1		33·67	3·7
		0·12	0·5		0·23	0·2		0·12	0·6
27		42·14	13·6		31·86	46·3		33·55	4·3
		0·11	0·7		0·21	0·2		0·12	0·5
Dec. 7		42·03	14·3		31·65	46·1		33·43	4·8
		0·10	0·7		0·18	0·6		0·10	0·6
17		41·93	15·0		31·47	45·5		33·33	5·4
		0·08	0·7		0·14	0·9		0·08	0·5
27		41·85	15·7		31·33	44·6		33·25	5·9
		0·05	0·8		0·11	1·4		0·06	0·4
37		41·80	16·5		31·22	43·2		33·19	6·3

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	η Aquarii.			ζ Pegasi.			α Piscis Australis. (*Fomalhaut*)		
	R. A.		Dec. *South.*	R. A.		Dec. *North.*	R. A.		Dec. *South.*
	h m	s	° ′ ″	h m	s	° ′ ″	h m	s	° ′ ″
	22 28		0 49	22 34		10 6	22 49		30 21
Jan. 1		12·98	55·1		31·92	31·0		58·13	34·2
		0·06	0·7		0·07	1·0		0·09	0·4
11		12·92	55·8		31·85	30·0		58·04	33·8
		0·03	0·6		0·04	1·2		0·07	0·8
21		12·89	56·4		31·81	28·8		57·97	33·0
		0·01	0·6		0·03	1·1		0·03	1·0
31		12·88	57·0		31·78	27·7		57·94	32·0
		0·01	0·5		0·00	1·0		0·01	1·2
Feb. 10		12·89	57·5		31·78	26·7		57·93	30·8
		0·05	0·3		0·04	1·0		0·02	1·5
20		12·94	57·8		31·82	25·7		57·95	29·3
		0·08	0·1		0·08	0·8		0·07	1·9
Mar. 2		13·02	57·9		31·90	24·9		58·02	27·4
		0·11	0·1		0·10	0·5		0·10	1·9
12		13·13	57·8		32·00	24·4		58·12	25·5
		0·15	0·4		0·14	0·3		0·13	2·1
22		13·28	57·4		32·14	24·1		58·25	23·4
		0·18	0·7		0·17	0·1		0·18	2·2
Apr. 1		13·46	56·7		32·31	24·2		58·43	21·2
		0·21	0·9		0·21	0·4		0·21	2·3
11		13·67	55·8		32·52	24·6		58·64	18·9
		0·24	1·2		0·24	0·7		0·25	2·3
21		13·91	54·6		32·76	25·3		58·89	16·6
		0·27	1·4		0·27	1·1		0·28	2·3
May 1		14·18	53·2		33·03	26·4		59·17	14·3
		0·29	1·7		0·29	1·4		0·31	2·3
11		14·47	51·5		33·32	27·8		59·48	12·0
		0·30	1·8		0·31	1·6		0·33	2·2
21		14·77	49·7		33·63	29·4		59·81	9·8
		0·32	1·9		0·32	1·9		0·35	2·0
31		15·09	47·8		33·95	31·3		60·16	7·8
		0·32	2·1		0·32	2·1		0·36	1·8
June 10		15·41	45·7		34·27	33·4		60·52	6·0
		0·31	2·0		0·31	2·2		0·35	1·5
20		15·72	43·7		34·58	35·6		60·87	4·5
		0·29	2·0		0·30	2·2		0·34	1·3
30		16·01	41·7		34·88	37·8		61·21	3·2
		0·27	1·9		0·27	2·3		0·32	0·9
July 10		16·28	39·8		35·15	40·1		61·53	2·3
		0·25	1·8		0·25	2·3		0·29	0·6
20		16·53	38·0		35·40	42·4		61·82	1·7
		0·21	1·7		0·21	2·1		0·26	0·3
30		16·74	36·3		35·61	44·5		62·08	1·4
		0·17	1·4		0·18	2·0		0·21	0·1
Aug. 9		16·91	34·9		35·79	46·5		62·29	1·5
		0·13	1·3		0·13	1·8		0·17	0·4
19		17·04	33·6		35·92	48·3		62·46	1·9
		0·08	1·0		0·09	1·7		0·13	0·7
29		17·12	32·6		36·01	50·0		62·59	2·6
		0·04	0·7		0·04	1·4		0·07	1·0
Sept. 8		17·16	31·9		36·05	51·4		62·66	3·6
		0·00	0·6		0·01	1·2		0·02	1·1
18		17·16	31·3		36·06	52·6		62·68	4·7
		0·03	0·3		0·03	0·9		0·03	1·3
28		17·13	31·0		36·03	53·5		62·65	6·0
		0·06	0·1		0·06	0·7		0·06	1·4
Oct. 8		17·07	30·9		35·97	54·2		62·59	7·4
		0·09	0·0		0·09	0·5		0·10	1·4
18		16·98	30·9		35·88	54·7		62·49	8·8
		0·11	0·3		0·11	0·2		0·12	1·3
28		16·87	31·2		35·77	54·9		62·37	10·1
		0·12	0·3		0·12	0·0		0·14	1·2
Nov. 7		16·75	31·5		35·65	54·9		62·23	11·3
		0·13	0·5		0·12	0·3		0·16	1·0
17		16·62	32·0		35·53	54·6		62·07	12·3
		0·12	0·5		0·12	0·4		0·15	0·8
27		16·50	32·5		35·41	54·2		61·92	13·1
		0·11	0·7		0·13	0·6		0·15	0·6
Dec. 7		16·39	33·2		35·28	53·6		61·77	13·7
		0·11	0·7		0·11	0·8		0·14	0·2
17		16·28	33·9		35·17	52·8		61·63	13·9
		0·09	0·7		0·10	0·9		0·12	0·0
27		16·19	34·6		35·07	51·9		61·51	13·9
		0·07	0·7		0·08	1·0		0·11	0·3
37		16·12	35·3		34·99	50·9		61·40	13·6

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	α Pegasi. (*Markab*)				γ Piscium.				κ Piscium.			
	R. A.		Dec. *North.*		R. A.		Dec. *North.*		R. A.		Dec. *North.*	
	h m	s	° ′	″	h m	s	° ′	″	h m	s	° ′	″
	22 57		14 27		23 9		2 31		23 19		0 29	
	s	s	″	″	s	s	″	″	s	s	″	″
Jan. 1	50·59	0·09	37·7	1·1	58·02	0·08	29·1	0·7	48·93	0·09	46·9	0·6
11	50·50	0·06	36·6	1·2	57·94	0·06	28·4	0·8	48·84	0·07	46·3	0·7
21	50·44	0·05	35·4	1·2	57·88	0·05	27·6	0·6	48·77	0·05	45·6	0·6
31	50·39		34·2		57·83		27·0		48·72		45·0	
		0·02		1·2		0·02		0·6		0·03		0·5
Feb. 10	50·37	0·01	33·0	1·2	57·81	0·00	26·4	0·5	48·69	0·01	44·5	0·3
20	50·38	0·04	31·8	1·0	57·81	0·04	25·9	0·3	48·68	0·02	44·2	0·2
Mar. 2	50·42	0·09	30·8	0·8	57·85	0·07	25·6	0·0	48·70	0·06	44·0	0·1
12	50·51		30·0		57·92		25·6		48·76		44·1	
		0·11		0·5		0·10		0·2		0·10		0·3
22	50·62	0·16	29·5	0·2	58·02	0·14	25·8	0·4	48·86	0·13	44·4	0·6
Apr. 1	50·78	0·19	29·3	0·1	58·16	0·18	26·2	0·8	48·99	0·17	45·0	0·9
11	50·97	0·23	29·4	0·5	58·34	0·22	27·0	1·0	49·16	0·20	45·9	1·1
21	51·20		29·9		58·56		28·0		49·36		47·0	
		0·26		0·8		0·25		1·3		0·24		1·3
May 1	51·46	0·29	30·7	1·2	58·81	0·27	29·3	1·5	49·60	0·27	48·3	1·6
11	51·75	0·30	31·9	1·5	59·08	0·29	30·8	1·8	49·87	0·29	49·9	1·8
21	52·05	0·32	33·4	1·7	59·37	0·31	32·6	1·9	50·16	0·30	51·7	2·0
31	52·37		35·1		59·68		34·5		50·46		53·7	
		0·33		2·0		0·32		2·0		0·32		2·0
June 10	52·70	0·32	37·1	2·2	60·00	0·32	36·5	2·1	50·78	0·32	55·7	2·1
20	53·02	0·31	39·3	2·3	60·32	0·31	38·6	2·1	51·10	0·31	57·8	2·0
30	53·33	0·29	41·6	2·4	60·63	0·30	40·7	2·1	51·41	0·30	59·8	2·1
July 10	53·62		44·0		60·93		42·8		51·71		61·9	
		0·26		2·3		0·27		1·9		0·28		1·9
20	53·88	0·23	46·3	2·3	61·20	0·24	44·7	1·8	51·99	0·25	63·8	1·7
30	54·11	0·20	48·6	2·2	61·44	0·21	46·5	1·7	52·24	0·21	65·5	1·6
Aug. 9	54·31	0·15	50·8	2·1	61·65	0·17	48·2	1·5	52·45	0·17	67·1	1·3
19	54·46		52·9		61·82		49·7		52·62		68·4	
		0·11		1·8		0·12		1·2		0·14		1·1
29	54·57	0·07	54·7	1·7	61·94	0·08	50·9	1·0	52·76	0·09	69·5	0·9
Sept. 8	54·64	0·03	56·4	1·5	62·02	0·04	51·9	0·8	52·85	0·05	70·4	0·7
18	54·67	0·01	57·9	1·2	62·06	0·01	52·7	0·5	52·90	0·02	71·1	0·4
28	54·66		59·1		62·07		53·2		52·92		71·5	
		0·04		0·9		0·02		0·3		0·02		0·2
Oct. 8	54·62	0·07	60·0	0·7	62·05	0·06	53·5	0·1	52·90	0·05	71·7	0·1
18	54·55	0·09	60·7	0·5	61·99	0·08	53·6	0·1	52·85	0·07	71·6	0·2
28	54·46	0·11	61·2	0·2	61·91	0·09	53·5	0·2	52·78	0·09	71·4	0·3
Nov. 7	54·35		61·4		61·82		53·3		52·69		71·1	
		0·11		0·0		0·11		0·4		0·10		0·4
17	54·24	0·13	61·4	0·3	61·71	0·11	52·9	0·5	52·59	0·11	70·7	0·6
27	54·11	0·12	61·1	0·5	61·60	0·11	52·4	0·6	52·48	0·11	70·1	0·7
Dec. 7	53·99	0·12	60·6	0·8	61·49	0·11	51·8	0·7	52·37	0·11	69·4	0·6
17	53·87		59·8		61·38		51·1		52·26		68·8	
		0·11		0·9		0·10		0·8		0·11		0·7
27	53·76	0·09	58·9	1·0	61·28	0·09	50·3	0·7	52·15	0·10	68·1	0·8
37	53·67		57·9		61·19		49·6		52·05		67·3	

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.	ι Piscium.			γ Cephei.		
	R.A.		Dec. *North.*	R.A.		Dec. *North.*
	h 23		° 4	h 23		° 76
	m s	s	′ ″ ″	m s	s	′ ″ ″
Jan. 1	32 48·68	0·10	52 29·4 0·8	33 38·40	0·81	51 48·9 1·0
11	48·58	0·08	28·6 0·7	37·59	0·75	47·9 1·5
21	48·50	0·06	27·9 0·8	36·84	0·66	46·4 2·0
31	48·44		27·1	36·18		44·4
		0·04	0·7		0·54	2·5
Feb. 10	48·40	0·02	26·4 0·6	35·64	0·39	41·9 2·8
20	48·38	0·01	25·8 0·4	35·25	0·22	39·1 3·0
Mar. 2	48·39	0·04	25·4 0·2	35·03	0·05	36·1 3·1
12	{48·43 48·44}		{25·6 25·2}	{34·98 34·99}		{33·0 32·7}
		0·08	0·0		0·14	3·0
22	48·52	0·12	25·2 0·3	35·13	0·33	29·7 2·9
Apr. 1	48·64	0·15	25·5 0·6	35·46	0·50	26·8 2·5
11	48·79	0·20	26·1 0·9	35·96	0·65	24·3 2·2
21	48·99		27·0	36·61		22·1
		0·23	1·1		0·78	1·7
May 1	49·22	0·26	28·1 1·4	37·39	0·89	20·4 1·2
11	49·48	0·29	29·5 1·7	38·28	0·98	19·2 0·6
21	49·77	0·30	31·2 1·8	39·26	1·02	18·6 0·1
31	50·07		33·0	40·28		18·5
		0·32	2·0		1·04	0·6
June 10	50·39	0·32	35·0 2·1	41·32	1·03	19·1 1·1
20	50·71	0·32	37·1 2·1	42·35	1·00	20·2 1·6
30	51·03	0·30	39·2 2·1	43·35	0·93	21·8 2·2
July 10	51·33		41·3	44·28		24·0
		0·28	2·0		0·85	2·5
20	51·61	0·26	43·3 1·9	45·13	0·75	26·5 3·0
30	51·87	0·23	45·2 1·8	45·88	0·63	29·5 3·3
Aug. 9	52·10	0·18	47·0 1·5	46·51	0·51	32·8 3·5
19	52·28		48·5	47·02		36·3
		0·14	1·4		0·37	3·7
29	52·42	0·11	49·9 1·1	47·39	0·22	40·0 3·8
Sept. 8	52·53	0·07	51·0 0·9	47·61	0·08	43·8 3·8
18	52·60	0·03	51·9 0·7	47·69	0·06	47·6 3·8
28	52·63		52·6	47·63		51·4
		0·01	0·4		0·20	3·6
Oct. 8	52·62	0·03	53·0 0·2	47·43	0·33	55·0 3·4
18	52·59	0·06	53·2 0·0	47·10	0·45	51 58·4 3·1
28	52·53	0·08	53·2 0·2	46·65	0·57	52 1·5 2·8
Nov. 7	52·45		53·0	46·08		4·3
		0·10	0·3		0·67	2·3
17	52·35	0·10	52·7 0·5	45·41	0·74	6·6 1·7
27	52·25	0·11	52·2 0·5	44·67	0·81	8·3 1·2
Dec. 7	52·14	0·11	51·7 0·7	43·86	0·85	9·5 0·7
17	52·03		51·0	43·01		10·2
		0·11	0·7		0·86	0·0
27	51·92	0·10	50·3 0·8	42·15	0·83	10·2 0·7
37	32 51·82		52 49·5	33 41·32		52 9·5

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APPARENT PLACES, FOR THE UPPER TRANSIT AT GREENWICH.

Month and Day.		δ Sculptoris.				ω Piscium.			
		R.A.		Dec. *South.*		R.A.		Dec. *North.*	
		h		°		h		°	
		23		28		23		6	
		m s	s	′ ″	″	m s	s	′ ″	″
Jan.	1	41 41·54	0·12	53 59·4	0·2	52 11·18	0·10	5 44·5	0·7
	11	41·42	0·10	59·2	0·4	11·08	0·09	43·8	0·8
	21	41·32	0·09	58·8	0·7	10·99	0·08	43·0	0·8
	31	41·23		58·1		10·91		42·2	
			0·06		1·1		0·06		0·7
Feb.	10	41·17	0·04	57·0	1·3	10·85	0·04	41·5	0·6
	20	41·13	0·01	55·7	1·6	10·81	0·01	40·9	0·5
Mar.	2	41·12	0·03	54·1	1·8	10·80	0·03	40·4	0·3
	12	41·15		52·3		10·83		40·1	
		18	0·08		2·3	17	0·06		0·0
	22	41·23	0·11	50·0	2·2	10·89	0·10	40·1	0·2
Apr.	1	41·34	0·16	47·8	2·4	10·99	0·14	40·3	0·5
	11	41·50	0·20	45·4	2·5	11·13	0·18	40·8	0·8
	21	41·70		42·9		11·31		41·6	
			0·23		2·5		0·22		1·1
May	1	41·93	0·26	40·4	2·5	11·53	0·24	42·7	1·3
	11	42·19	0·30	37·9	2·5	11·77	0·28	44·0	1·6
	21	42·49	0·33	35·4	2·3	12·05	0·30	45·6	1·8
	31	42·82		33·1		12·35		47·4	
			0·34		2·1		0·32		1·9
June	10	43·16	0·35	31·0	2·0	12·67	0·32	49·3	2·1
	20	43·51	0·34	29·0	1·7	12·99	0·32	51·4	2·1
	30	43·85	0·33	27·3	1·3	13·31	0·31	53·5	2·1
July	10	44·18		26·0		13·62		55·6	
			0·32		1·0		0·29		2·0
	20	44·50	0·29	25·0	0·6	13·91	0·27	57·6	2·0
	30	44·79	0·26	24·4	0·2	14·18	0·23	5 59·6	1·8
Aug.	9	45·05	0·21	24·2	0·1	14·41	0·20	6 1·4	1·7
	19	45·26		24·3		14·61		3·1	
			0·17		0·5		0·17		1·4
	29	45·43	0·12	24·8	0·8	14·78	0·12	4·5	1·2
Sept.	8	45·55	0·08	25·6	1·1	14·90	0·09	5·7	0·9
	18	45·63	0·03	26·7	1·3	14·99	0·05	6·6	0·8
	28	45·66		28·0		15·04		7·4	
			0·01		1·5		0·01		0·5
Oct.	8	45·65	0·04	29·5	1·5	15·05	0·01	7·9	0·3
	18	45·61	0·08	31·0	1·6	15·04	0·04	8·2	0·0
	28	45·53	0·11	32·6	1·4	15·00	0·07	8·2	0·1
Nov.	7	45·42		34·0		14·93		8·1	
			0·12		1·4		0·09		0·2
	17	45·30	0·14	35·4	1·1	14·84	0·10	7·9	0·4
	27	45·16	0·14	36·5	1·0	14·74	0·10	7·5	0·6
Dec.	7	45·02	0·15	37·5	0·7	14·64	0·10	6·9	0·6
	17	44·87		38·2		14·54		6·3	
			0·14		0·3		0·11		0·7
	27	44·73	0·13	38·5	0·1	14·43	0·11	5·6	0·8
	37	41 44·60		53 38·6		52 14·32		6 4·8	

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TABLE,

Showing the *Correction* to be applied to the *preceding* Apparent Places of Five Polar Stars, for the terms of Nutation involving 2 ☾.

Arg.		α Urs. Min.		51 Cephei.		σ Octantis.		δ Urs. Min.		λ Urs. Min.		*Arg.*	
☾		R.A.	Dec.	R.A.	Dec.	R.A.	Dec.	R.A.	Dec.	R.A.	Dec.	☾	
°	°	s	″	s	″	s	″	s	″	s	″	°	°
0	180	−·229	+·03	+·018	+·09	−·025	−·09	−·008	−·09	−·159	−·08	90	270
1	181	·231	·02	·014	·09	·040	·09	·005	·09	·151	·08	91	271
2	182	·233	·02	·009	·09	·055	·09	−·003	·09	·143	·08	92	272
3	183	·235	·02	·005	·09	·070	·09	·000	·09	·135	·08	93	273
4	184	·237	·01	+·001	·09	·085	·09	+·003	·09	·127	·08	94	274
5	185	·238	·01	−·003	·09	·100	·09	·006	·09	·118	·08	95	275
6	186	·239	+·01	·008	·09	·115	·08	·008	·09	·109	·08	96	276
7	187	·240	·00	·012	·09	·130	·08	·011	·09	·100	·08	97	277
8	188	·240	·00	·017	·09	·144	·08	·013	·09	·091	·08	98	278
9	189	·240	·00	·021	·09	·158	·08	·016	·09	·082	·08	99	279
10	190	·240	·00	·025	·09	·172	·08	·019	·09	·073	·09	100	280
11	191	·240	−·01	·029	·09	·186	·08	·021	·09	·064	·09	101	281
12	192	·239	·01	·033	·09	·200	·08	·024	·09	·055	·09	102	282
13	193	·238	·01	·037	·08	·213	·08	·026	·08	·046	·09	103	283
14	194	·236	·02	·041	·08	·226	·08	·029	·08	·036	·09	104	284
15	195	·235	·02	·045	·08	·239	·08	·032	·08	·026	·09	105	285
16	196	·233	·02	·049	·08	·251	·07	·034	·08	·017	·09	106	286
17	197	·231	·02	·053	·08	·263	·07	·037	·08	−·008	·09	107	287
18	198	·229	·03	·056	·08	·275	·07	·039	·08	+·002	·09	108	288
19	199	·226	·03	·060	·08	·287	·07	·042	·08	·012	·09	109	289
20	200	·223	·03	·065	·08	·299	·07	·044	·07	·022	·09	110	290
21	201	·220	·03	·069	·07	·310	·07	·046	·07	·032	·09	111	291
22	202	·216	·04	·073	·07	·320	·06	·048	·07	·041	·09	112	292
23	203	·212	·04	·076	·07	·330	·06	·050	·07	·050	·09	113	293
24	204	·208	·04	·079	·07	·340	·06	·052	·07	·060	·08	114	294
25	205	·204	·04	·082	·07	·350	·06	·054	·06	·070	·08	115	295
26	206	·200	·05	·085	·06	·359	·05	·055	·06	·079	·08	116	296
27	207	·196	·05	·088	·06	·368	·05	·057	·06	·088	·08	117	297
28	208	·190	·05	·091	·06	·376	·05	·059	·06	·097	·08	118	298
29	209	·185	·05	·094	·05	·383	·04	·061	·06	·106	·08	119	299
30	210	·179	·05	·097	·05	·390	·04	·063	·05	·115	·08	120	300
31	211	·173	·06	·100	·05	·396	·04	·064	·05	·124	·08	121	301
32	212	·168	·06	·103	·05	·402	·03	·065	·05	·133	·08	122	302
33	213	·162	·06	·105	·04	·408	·03	·067	·04	·142	·07	123	303
34	214	·155	·06	·107	·04	·413	·03	·068	·04	·150	·07	124	304
35	215	·148	·06	·109	·04	·418	·03	·070	·04	·158	·07	125	305
36	216	·141	·07	·111	·04	·423	·02	·071	·04	·165	·07	126	306
37	217	·133	·07	·113	·03	·427	·02	·072	·03	·172	·06	127	307
38	218	·126	·07	·115	·03	·430	·01	·073	·03	·179	·06	128	308
39	219	·119	·07	·116	·03	·432	·01	·074	·03	·186	·06	129	309
40	220	·113	·07	·117	·03	·434	−·01	·075	·02	·193	·06	130	310
41	221	·106	·07	·118	·02	·435	·00	·076	·02	·199	·05	131	311
42	222	·099	·08	·119	·02	·436	·00	·077	·02	·206	·05	132	312
43	223	·092	·08	·120	·01	·436	·00	·077	·02	·212	·05	133	313
44	224	·084	·08	·121	·01	·436	·00	·078	·01	·218	·05	134	314
45	225	−·075	−·08	−·122	+·01	−·436	+·01	+·078	−·01	+·224	−·04	135	315

NOTE.—When the *Argument* is on the *right*-hand side of the Table, the sign of the correction must be changed.

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TABLE,

Showing the *Correction* to be applied to the *preceding* Apparent Places of Five Polar Stars, for the terms of Nutation involving 2 ☾.

Arg.		α Urs. Min.		51 Cephei.		σ Octantis.		δ Urs. Min.		λ Urs. Min.		*Arg.*	
☾		R.A.	Dec.	R.A.	Dec.	R.A.	Dec.	R.A.	Dec.	R.A.	Dec.	☾	
°	°	s	″	s	″	s	″	s	″	s	″	°	°
45	225	−·075	−·08	−·122	+·01	−·436	+·01	+·078	−·01	+·224	−·04	135	315
46	226	·067	·08	·123	·00	·435	·01	·078	−·01	·229	·04	136	316
47	227	·058	·08	·124	·00	·433	·02	·079	·00	·234	·04	137	317
48	228	·050	·08	·124	·00	·431	·02	·079	·00	·239	·04	138	318
49	229	·042	·08	·124	−·01	·428	·02	·078	·00	·244	·04	139	319
50	230	·034	·08	·124	·01	·425	·02	·078	+·01	·249	·03	140	320
51	231	·026	·08	·123	·01	·421	·03	·078	·01	·253	·03	141	321
52	232	·017	·08	·123	·02	·417	·03	·078	·01	·256	·03	142	322
53	233	−·008	·08	·122	·02	·412	·03	·077	·02	·259	·02	143	323
54	234	·000	·08	·122	·02	·407	·04	·077	·02	·262	·02	144	324
55	235	+·008	·08	·121	·02	·401	·04	·076	·02	·265	·02	145	325
56	236	·016	·08	·121	·03	·395	·04	·075	·03	·267	·02	146	326
57	237	·025	·08	·120	·03	·389	·04	·074	·03	·269	·01	147	327
58	238	·033	·08	·119	·03	·382	·05	·073	·03	·271	·01	148	328
59	239	·042	·08	·117	·04	·374	·05	·072	·03	·273	−·01	149	329
60	240	·050	·08	·115	·04	·365	·05	·071	·04	·274	·00	150	330
61	241	·058	·08	·114	·04	·356	·05	·070	·04	·275	·00	151	331
62	242	·066	·08	·112	·04	·347	·06	·069	·04	·275	·00	152	332
63	243	·074	·08	·110	·05	·338	·06	·068	·05	·275	+·01	153	333
64	244	·082	·08	·108	·05	·328	·06	·066	·05	·275	·01	154	334
65	245	·090	·08	·106	·05	·318	·06	·064	·05	·275	·01	155	335
66	246	·097	·07	·102	·06	·307	·07	·062	·05	·274	·02	156	336
67	247	·105	·07	·100	·06	·296	·07	·061	·06	·272	·02	157	337
68	248	·112	·07	·098	·06	·284	·07	·060	·06	·270	·02	158	338
69	249	·120	·07	·095	·06	·272	·07	·058	·06	·268	·02	159	339
70	250	·127	·07	·093	·06	·261	·07	·056	·06	·266	·03	160	340
71	251	·134	·07	·090	·07	·249	·08	·054	·06	·263	·03	161	341
72	252	·141	·07	·087	·07	·237	·08	·052	·07	·260	·03	162	342
73	253	·148	·06	·084	·07	·224	·08	·050	·07	·257	·04	163	343
74	254	·154	·06	·080	·07	·211	·08	·048	·07	·254	·04	164	344
75	255	·161	·06	·077	·07	·197	·08	·046	·07	·250	·04	165	345
76	256	·167	·06	·074	·08	·183	·09	·045	·08	·246	·04	166	346
77	257	·173	·06	·070	·08	·169	·09	·043	·08	·242	·05	167	347
78	258	·178	·05	·066	·08	·155	·09	·040	·08	·237	·05	168	348
79	259	·184	·05	·062	·08	·141	·09	·037	·08	·232	·05	169	349
80	260	·189	·05	·059	·08	·126	·09	·034	·08	·227	·06	170	350
81	261	·194	·05	·055	·08	·111	·09	·031	·08	·221	·06	171	351
82	262	·199	·04	·050	·08	·096	·09	·030	·08	·215	·06	172	352
83	263	·204	·04	·047	·09	·081	·09	·027	·08	·209	·06	173	353
84	264	·207	·04	·043	·09	·066	·09	·024	·09	·203	·06	174	354
85	265	·212	·04	·039	·09	·051	·09	·022	·09	·196	·07	175	355
86	266	·216	·03	·035	·09	·036	·09	·020	·09	·189	·07	176	356
87	267	·220	·03	·030	·09	·021	·09	·017	·09	·182	·07	177	357
88	268	·223	·03	·026	·09	−·006	·09	·013	·09	·175	·07	178	358
89	269	·226	·03	·022	·09	+·009	·09	·011	·09	·167	·07	179	359
90	270	+·229	−·03	−·018	−·09	+·025	+·09	+·008	+·09	+·159	+·08	180	360

NOTE.—When the *Argument* is on the *right*-hand side of the Table, the sign of the correction must be changed.

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			h m s	s	s	° ′ ″	″
Jan. 1	37 Sextantis*	6	10 38 53·10			N. 7 7	
	c Leonis - *	5	10 53 34·14			6 51	
	Moon II. L.	- -	10 39 26·41	132·45	67·26	4 27 59·3	−948·1
	Moon II. U.	20·6	11 5 51·05	131·78	67·11	N. 1 16 56·8	960·1
	υ Leonis - -	4½	11 29 51·37			S. 0 3	
	β Virginis -	3½	11 43 28·71			N. 2 33	
2	*υ* Leonis - -	4½	11 29 51·40			S. 0 3	
	β Virginis -	3½	11 43 28·74			N. 2 33	
	Moon II. L.	- -	11 32 12·26	131·88	67·15	S. 1 55 9·6	−958·8
	Moon II. U.	21·6	11 58 39·16	132·73	67·39	5 5 41·6	944·4
	q Virginis -	6	12 26 37·58			8 41	
	χ Virginis -	5	12 32 5·87			S. 7 14	
3	*q* Virginis -	6	12 26 37·61			S. 8 41	
	χ Virginis -	5	12 32 5·90			7 14	
	Moon II. L.	- -	12 25 20·86	134·34	67·82	8 12 2·1	−916·8
	Moon II. U.	22·7	12 52 26·00	136·63	68·41	11 11 32·8	876·0
	α Virginis -	1	13 17 53·25			10 26	
	75 Virginis -	6	13 25 27·17			S. 14 39	
4	*α* Virginis -	1	13 17 53·28			S. 10 26	
	75 Virginis -	6	13 25 27·21			14 39	
	Moon II. L.	- -	13 20 2·38	139·53	69·15	14 1 33·3	−821·8
	Moon II. U.	23·7	13 48 16·35	142·87	69·99	16 39 21·5	754·0
	B.A.C. 4700	5½	14 3 15·78			15 39	
	λ Virginis -	4½	14 11 36·23			S. 12 44	
5	B.A.C. 4700	5½	14 3 15·82			S. 15 39	
	λ Virginis -	4½	14 11 36·26			12 44	
	Moon II. L.	- -	14 17 12·23	146·47	70·89	19 2 14·7	−672·7
	Moon II. U.	24·7	14 46 51·57	150·07	71·76	21 7 33·6	578·3
	20 Libræ - -	3½	14 55 56·98			24 44	
	*ι*¹ Libræ - -	4½	15 4 18·75			S. 19 16	
6	20 Libræ - -	3½	14 55 57·02			S. 24 44	
	*ι*¹ Libræ - -	4½	15 4 18·79			19 16	
	Moon II. L.	- -	15 17 12·57	153·36	72·54	22 52 47·3	−472·0
	Moon II. U.	25·8	15 48 9·60	156·01	73·16	24 15 41·6	355·5
	α Scorpii - -	1½	16 20 53·42			26 7	
	τ Scorpii - -	3½	16 27 14·16			S. 27 55	
7	*α* Scorpii - -	1½	16 20 53·45			S. 26 7	
	τ Scorpii - -	3½	16 27 14·19			27 55	
	Moon II. L.	- -	16 19 33·18	157·73	73·55	25 14 29·3	−231·4
	Moon II. U.	26·8	16 51 10·45	158·27	73·65	S. 25 47 58·9	−103·1
8	Moon II. L.	- -	17 22 46·40	157·50	73·43	S. 25 55 42·8	+ 25·6
	Moon II. U.	27·8	17 54 5·28	155·43	72·91	25 37 59·1	150·7
9	Moon II. L.	- -	18 24 52·25	152·22	72·09	S. 24 55 53·3	+268·8
	Moon II. U.	28·9	18 54 55·01	148·11	71·07	23 51 8·2	376·8
10	Moon II. L.	- -	19 24 4·49	143·40	69·88	S. 22 25 56·8	+472·9

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			h m s	s	s	° ′ ″	″
Jan. 11	Moon I. U.	0·4	19 49 58·24	138·61	68·61	S. 20 42 49·3	+556·0
	Moon I. L.	- -	20 17 11·49	133·61	67·32	18 44 24·6	625·9
12	Moon I. U.	1·4	20 43 25·73	128·82	66·08	S. 16 33 19·2	+682·9
	Moon I. L.	- -	21 8 44·56	124·40	64·92	14 12 2·7	727·9
13	Moon I. U.	2·4	21 33 13·37	120·49	63·89	S. 11 42 53·3	+761·9
	Moon I. L.	- -	21 56 58·71	117·17	63·01	9 7 56·7	786·0
14	Moon I. U.	3·4	22 20 7·91	114·48	62·30	S. 6 29 4·6	+801·3
	Moon I. L.	- -	22 42 48·73	112·44	61·76	S. 3 47 56·5	808·8
15	1 Piscium -	6	22 47 53·09			N. 0 19	
	β Piscium -	4½	22 56 48·59			N. 3 4	
	Moon I. U.	4·5	23 5 9·09	111·07	61·41	S. 1 6 1·9	+809·2
	Moon I. L.	- -	23 27 17·00	110·36	61·25	N. 1 35 18·6	803·2
	κ Piscium -	4½	23 19 48·81			0 30	
	ι Piscium *	4½	23 32 48·55			N. 4 52	
16	κ Piscium -	4½	23 19 48·80			N. 0 30	
	ι Piscium *	4½	23 32 48·54			4 52	
	Moon I. U.	5·5	23 49 20·49	110·33	61·27	4 14 50·5	+791·1
	Moon I. L.	- -	0 11 27·49	110·95	61·48	6 51 22·6	773·3
	d Piscium *	5½	0 13 27·46			7 25	
	45 Piscium *	6	0 18 32·64			N. 6 55	
17	d Piscium *	5½	0 13 27·45			N. 7 25	
	45 Piscium *	6	0 18 32·63			6 55	
	Moon I. U.	6·5	0 33 45·84	112·22	61·87	9 23 45·4	+749·6
	Moon I. L.	- -	0 56 23·23	114·12	62·43	11 50 47·7	719·8
	δ Piscium *	4½	0 41 29·17			6 50	
	ε Piscium *	4	0 55 44·80			N. 7 8	
18	δ Piscium *	4½	0 41 29·16			N. 6 50	
	ε Piscium *	4	0 55 44·79			7 8	
	Moon I. U.	7·5	1 19 27·12	116·63	63·14	14 11 14·7	+683·6
	Moon I. L.	- -	1 43 4·60	119·71	64·00	16 23 45·5	640·4
	β Arietis - -	2½	1 46 59·20			20 8	
	α Arietis - -	2	1 59 21·91			N. 22 48	
19	β Arietis - -	2½	1 46 59·19			N. 20 8	
	α Arietis - -	2	1 59 21·90			22 48	
	Moon I. U.	8·6	2 7 22·20	123·30	64·99	18 26 52·3	+589·4
	Moon I. L.	- -	2 32 25·52	127·31	66·06	20 18 58·2	530·1
	41 Arietis - -	4	2 41 50·21			26 41	
	ε Arietis - -	4½	2 51 17·84			N. 20 47	
20	41 Arietis - -	4	2 41 50·20			N. 26 41	
	ε Arietis -	4½	2 51 17·83			20 47	
	Moon I. U.	9·6	2 58 18·91	131·63	67·19	21 58 17·2	+461·5
	Moon I. L.	- -	3 25 5·04	136·07	68·33	23 22 55·8	+383·2
	ζ Arietis - -	4½	3 6 56·71			20 32	
	17 Tauri - -	4	3 36 39·69			N. 23 40	
21	ζ Arietis -	4½	3 6 56·69			N. 20 32	

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			h m s	s	s	° ′ ″	″
Jan. 21	17 Tauri - -	4	3 36 39·67			N.23 40	
	Moon I. U.	10·6	3 52 44·30	140·44	69·42	24 30 55·3	+295·0
	Moon I. L.	- -	4 21 14·44	144·51	70·42	25 20 16·5	196·9
	δ^1 Tauri - -	4	4 14 57·42			17 13	
	ε Tauri - -	3½	4 20 32·36			N.18 52	
22	δ^1 Tauri - -	4	4 14 57·41			N.17 13	
	ε Tauri - -	3½	4 20 32·35			18 52	
	Moon I. U.	11·7	4 50 30·30	148·02	71·26	25 49 5·5	+ 89·9
	Moon I. L.	- -	5 20 23·76	150·74	71·89	25 55 44·0	— 24·5
	β Tauri - -	2	5 17 33·02			28 29	
	ζ Tauri - -	3½	5 29 22·94			N.21 3	
23	β Tauri - -	2	5 17 33·01			N.28 29	
	ζ Tauri - -	3½	5 29 22·94			21 3	
	Moon I. U.	12·7	5 50 44·29	152·50	72·29	25 38 57·0	—144·0
	Moon I. L.	- -	6 21 19·72	153·22	72·43	24 57 59·6	265·6
	η Geminor.	3½	6 6 31·92			22 33	
	μ Geminor.	3	6 14 35·78			N.22 35	
24	η Geminor.	3½	6 6 31·92			N.22 33	
	μ Geminor.	3	6 14 35·78			22 35	
	Moon I. U.	13·7	6 51 57·44	152·90	72·32	23 52 46·3	—386·1
	Moon I. L.	- -	7 22 25·69	151·67	71·98	22 23 51·1	502·1
	υ Geminor.	4½	7 27 24·29			27 12	
	β Geminor.	1½	7 36 51·38			N.28 21	
25	υ Geminor.	4½	7 27 24·30			N.27 12	
	β Geminor.	1½	7 36 51·38			28 21	
	Moon I. U.	14·8	7 52 34·60	149·72	71·48	20 32 27·7	—610·3
	Moon I. L.	- -	8 22 17·12	147·31	70·87	18 20 26·0	708·0
	η Cancri - -	6	8 24 42·82			20 55	
	γ Cancri - -	4½	8 35 17·15			N.21 58	
26	η Cancri - -	6	8 24 42·83			N.20 55	
	γ Cancri - -	4½	8 35 17·16			21 58	
	Moon II. U.	15·8	8 53 49·68	144·59	70·21	15 50 5·3	—793·1
	o Leonis - *	3½	9 33 46·66			10 31	
	18 Leonis - *	6	9 38 56·53			N.12 27	
27	o Leonis - *	3½	9 33 46·67			N.10 31	
	18 Leonis - *	6	9 38 56·55			12 27	
	Moon II. L.	- -	9 22 29·29	142·04	69·58	13 4 8·0	—864·0
	Moon II. U.	16·8	9 50 39·69	139·76	69·01	10 5 31·2	919·5
	45 Leonis - *	6	10 20 20·80			10 28	
	ρ Leonis - *	4	10 25 31·89			N.10 1	
28	45 Leonis - *	6	10 20 20·82			N.10 28	
	ρ Leonis - *	4	10 25 31·91			10 1	
	Moon II. L.	- -	10 18 25·19	137·91	68·55	6 57 21·9	—959·3
	Moon II. U.	17·9	10 45 51·77	136·63	68·24	N. 3 42 50·9	—983·2
	e Leonis - -	5	11 23 14·97			S. 2 14	
	υ Leonis - -	4½	11 29 52·15			S. 0 3	

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			h m s	s	s	° ′ ″	″
Jan. 29	*e* Leonis - -	5	11 23 15·00			S. 2 14	
	v Leonis - -	4½	11 29 52·17			S. 0 3	
	Moon II. L. - -		11 13 6·70	135·98	68·10	N. 0 25 9·3	−991·1
	Moon II. U.	18·9	11 40 17·93	136·01	68·14	S. 2 52 34·2	983·5
	η Virginis -	3½	12 12 49·70			N. 0 6	
	q Virginis -	6	12 26 38·42			S. 8 41	
30	*η* Virginis -	3½	12 12 49·73			N. 0 6	
	q Virginis -	6	12 26 38·45			S. 8 41	
	Moon II. L. - -		12 7 33·64	136·73	68·35	6 7 15·0	−960·8
	Moon II. U.	19·9	12 35 1·94	138·10	68·73	9 15 53·2	923·2
	58 Virginis -	6	13 10 12·27			9 49	
	α Virginis -	1	13 17 54·13			S. 10 26	
31	58 Virginis -	6	13 10 12·30			S. 9 49	
	α Virginis -	1	13 17 54·16			10 26	
	Moon II. L. - -		13 2 50·26	140·05	69·26	12 15 34·8	−871·4
	Moon II. U.	21·0	13 31 4·96	142·47	69·90	15 3 31·4	805·8
	89 Virginis -	5	13 42 21·19			17 26	
	B.A.C. 4700	5½	14 3 16·70			S. 15 39	
Feb. 1	89 Virginis -	5	13 42 21·22			S. 17 26	
	B.A.C. 4700	5½	14 3 16·73			15 39	
	Moon II. L. - -		13 59 50·79	145·20	70·61	17 37 1·8	−727·1
	Moon II. U.	22·0	14 29 10·27	148·05	71·33	19 53 33·4	636·2
	20 Libræ - -	3½	14 55 57·94			24 44	
	*i*¹ Libræ - -	4½	15 4 19·67			S. 19 16	
2	20 Libræ - -	3½	14 55 57·97			S. 24 44	
	*i*¹ Libræ - -	4½	15 4 19·70			19 16	
	Moon II. L. - -		14 59 3·28	150·75	72·00	21 50 46·4	−534·3
	Moon II. U.	23·0	15 29 26·58	153·04	72·56	23 26 38·6	423·0
	σ Scorpii - -	3½	16 12 45·72			25 15	
	α Scorpii - -	1½	16 20 54·31			S. 26 7	
3	*σ* Scorpii - -	3½	16 12 45·75			S. 25 15	
	α Scorpii - -	1½	16 20 54·35			26 7	
	Moon II. L. - -		16 0 13·66	154·67	72·95	24 39 29·6	−304·5
	Moon II. U.	24·1	16 31 15·11	155·40	73·11	25 28 9·3	−181·6
	θ Ophiuchi -	3½	17 13 29·23			24 51	
	d Ophiuchi -	4	17 18 29·56			S. 29 44	
4	*θ* Ophiuchi -	3½	17 13 29·26			S. 24 51	
	d Ophiuchi -	4	17 18 29·60			29 44	
	Moon II. L. - -		17 2 19·18	155·09	73·01	23 52 1·6	− 57·2
	Moon II. U.	25·1	17 33 12·97	153·69	72·64	25 51 8·5	+ 65·5
	δ Sagittarii	3½	18 12 6·25			29 53	
	λ Sagittarii	3	18 19 24·06			S. 25 30	
5	*δ* Sagittarii	3½	18 12 6·28			S. 29 53	
	λ Sagittarii	3	18 19 24·09			25 30	
	Moon II. L. - -		18 3 43·63	151·25	72·01	25 26 9·6	+183·3
	Moon II. U.	26·1	18 33 39·66	147·95	71·15	S. 24 38 19·1	+293·7

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			h m s	s	s	o ′ ″	″
Feb. 6	Moon II. L.	- -	19 2 51·90	144·00	70·13	S. 23 29 19·2	+394·5
	Moon II. U.	27·2	19 31 14·01	139·64	68·98	22 1 13·2	484·5
7	Moon II. L.	- -	19 58 42·69	135·13	67·79	S. 20 16 16·6	+562·9
	Moon II. U.	28·2	20 25 17·40	130·68	66·60	18 16 51·0	629·5
8	Moon II. L.	- -	20 50 59·97	126·47	65·46	S. 16 5 15·7	+684·5
	Moon II. U.	29·3	21 15 54·10	122·63	64·42	13 43 46·9	728·5
9	Moon I. L.	- -	21 37 57·84	119·39	63·49	S. 11 14 32·2	+762·3
10	Moon I. U.	0·7	22 1 32·69	116·51	62·70	S. 8 39 30·7	+786·5
	Moon I. L.	- -	22 24 36·34	114·20	62·07	6 0 32·0	801·9
11	Moon I. U.	1·7	22 47 15·70	112·46	61·61	S. 3 19 17·2	+809·3
	Moon I. L.	- -	23 9 37·82	111·33	61·31	S. 0 37 19·2	809·2
12	Moon I. U.	2·7	23 31 49·84	110·78	61·19	N. 2 3 55·9	+802·2
	Moon I. L.	- -	23 53 58·89	110·83	61·24	4 43 7·0	788·6
13	ω Piscium *	4	23 52 10·84			N. 6 6	
	35 Piscium *	6	0 7 49·71			8 3	
	Moon I. U.	3·7	0 16 12·02	111·46	61·45	7 18 56·7	+768·7
	Moon I. L.	- -	0 38 36·19	112·66	61·83	9 50 9·6	742·4
	δ Piscium *	4½	0 41 28·90			6 50	
	ε Piscium *	4	0 55 44·51			N. 7 8	
14	δ Piscium *	4½	0 41 28·89			N. 6 50	
	ε Piscium *	4	0 55 44·50			7 8	
	Moon I. U.	4·7	1 1 18·18	114·43	62·37	12 15 29·6	+709·9
	Moon I. L.	- -	1 24 24·51	116·72	63·04	14 33 40·0	670·8
	η Piscium -	3½	1 24 3·64			14 38	
	π Piscium *	6	1 29 44·80			N. 11 26	
15	η Piscium -	3½	1 24 3·62			N. 14 38	
	π Piscium *	6	1 29 44·79			11 26	
	Moon I. U.	5·8	1 48 1·33	119·50	63·85	16 43 20·2	+624·8
	Moon I. L.	- -	2 12 14·14	122·71	64·75	18 43 5·6	571·5
	α Arietis - -	2	1 59 21·52			22 48	
	θ Arietis - -	5½	2 10 24·96			N. 19 15	
16	α Arietis - -	2	1 59 21·51			N. 22 48	
	θ Arietis - -	5½	2 10 24·95			19 15	
	Moon I. U.	6·8	2 37 7·75	126·28	65·74	20 31 25·6	+510·5
	Moon I. L.	- -	3 2 45·78	130·09	66·78	22 6 45·0	441·3
	ε Arietis - -	4½	2 51 17·43			20 47	
	ζ Arietis - -	4½	3 6 56·31			N. 20 32	
17	ε Arietis - -	4½	2 51 17·42			N. 20 47	
	ζ Arietis - -	4½	3 6 56·29			20 32	
	Moon I. U.	7·8	3 29 10·38	134·01	67·82	23 27 23·2	+363·6
	Moon I. L.	- -	3 56 21·88	137·88	68·83	24 31 37·3	+277·3
	27 Tauri - -	4	3 40 55·71			23 38	
	A' Tauri - -	4½	3 56 30·58			N. 21 42	
18	27 Tauri - -	4	3 40 55·69			N. 23 38	

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			h m s	s	s	° ′ ″	″
Feb. 18	A¹ Tauri - -	4½	3 56 30·57			N.21 42	
	Moon I. U.	8·9	4 24 18·50	141·50	69·74	25 17 45·1	+ 182·6
	Moon I. L.	- -	4 52 56·15	144·69	70·53	25 44 8·9	+ 80·1
	τ Tauri - -	4½	4 33 56·27			22 41	
	i Tauri - -	5½	4 43 16·66			N.18 36	
19	τ Tauri - -	4½	4 33 56·26			N.22 41	
	i Tauri - -	5½	4 43 16·64			18 36	
	Moon I. U.	9·9	5 22 8·53	147·26	71·16	25 49 22·0	— 28·9
	Moon I. L.	- -	5 51 47·38	149·08	71·58	25 32 16·1	142·8
	χ² Orionis -	4½	5 46 11·41			20 15	
	1 Geminor.	5	5 55 42·69			N.23 16	
20	χ² Orionis -	4½	5 46 11·39			N.20 15	
	1 Geminor.	5	5 55 42·68			23 16	
	Moon I. U.	10·9	6 21 43·20	150·08	71·80	24 52 5·7	— 259·2
	Moon I. L.	- -	6 51 46·07	150·26	71·80	23 48 34·4	375·8
	ε Geminor.	3½	6 35 25·50			25 16	
	ζ Geminor.	4	6 55 54·49			N.20 46	
21	ε Geminor.	3½	6 35 25·48			N.25 16	
	ζ Geminor.	4	6 55 54·48			20 46	
	Moon I. U.	12·0	7 21 46·54	149·70	71·63	22 21 57·4	— 489·7
	Moon I. L.	- -	7 51 36·65	148·56	71·30	20 33 4·6	598·0
	κ Geminor.	3½	7 36 6·01			24 44	
	φ Geminor.	5	7 45 2·16			N.27 7	
22	κ Geminor.	3½	7 36 6·00			N.24 44	
	φ Geminor.	5	7 45 2·15			27 7	
	Moon I. U.	13·0	8 21 10·42	147·02	70·88	18 23 17·4	— 698·2
	Moon I. L.	- -	8 50 24·41	145·30	70·42	15 54 28·6	787·9
	δ Cancri - -	4	8 36 49·87			18 40	
	α Cancri - *	4	8 50 55·78			N.12 24	
23	δ Cancri - -	4	8 36 49·87			N.18 40	
	α Cancri - *	4	8 50 55·78			12 24	
	Moon I. U.	14·0	9 19 17·69	143·60	69·97	13 8 57·0	— 865·0
	Moon I. L.	- -	9 47 51·73	142·12	69·58	10 9 25·9	927·7
	π Leonis - *	5	9 52 54·78			8 43	
	α Leonis - *	1½	10 1 0·86			N.12 39	
24	π Leonis - *	5	9 52 54·78			N. 8 43	
	α Leonis - *	1½	10 1 0·86			12 39	
	Moon I. U.	15·1	10 16 10·05	141·01	69·28	6 58 56·3	— 974·5
	d Leonis - *	5	10 53 25·64			4 22	
	p¹ Leonis - -	5	11 6 41·71			N. 0 41	
25	d Leonis - *	5	10 53 25·65			N. 4 22	
	p¹ Leonis - -	5	11 6 41·72			0 41	
	Moon II. L.	- -	10 46 36·08	140·37	69·13	3 40 44·7	—1004·5
	Moon II. U.	16·1	11 14 39·63	140·33	69·12	N. 0 18 17·7	—1017·0
	υ Leonis - -	4½	11 29 52·66			S. 0 3	
	β Virginis -	3½	11 43 30·05			N. 2 33	

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			h m s	s	s	° ′ ″	″
Feb. 26	*v* Leonis - -	4½	11 29 52·67			S. 0 3	
	β Virginis -	3½	11 43 30·07			N. 2 33	
	Moon II. L.	- -	11 42 46·35	140·89	69·28	S. 3 4 51·3	−1011·5
	Moon II. U.	17·2	12 11 3·42	142·05	69·59	6 25 6·8	988·0
	q Virginis -	6	12 26 39·06			8 41	
	28 Virginis -	6	12 34 49·26			S. 6 44	
27	*q* Virginis -	6	12 26 39·08			S. 8 41	
	28 Virginis -	6	12 34 49·28			6 44	
	Moon II. L.	- -	12 39 37·83	143·77	70·05	9 38 53·7	− 946·9
	Moon II. U.	18·2	13 8 35·54	145·93	70·62	12 42 43·2	888·6
	α Virginis -	1	13 17 54·86			10 26	
	83 Virginis -	6	13 37 2·68			S. 15 29	
28	*α* Virginis -	1	13 17 54·89			S. 10 26	
	83 Virginis -	6	13 37 2·71			15 29	
	Moon II. L.	- -	13 38 1·17	148·39	71·27	15 33 15·8	− 814·2
	Moon II. U.	19·2	14 7 57·24	150·96	71·94	18 7 24·9	725·0
	*α*¹ Libræ - -	2½	14 43 13·80			15 28	
	20 Libræ - -	3½	14 55 58·83			S. 24 44	
Mar. 1	*α*¹ Libræ - -	2½	14 43 13·83			S. 15 28	
	20 Libræ - -	3½	14 55 58·86			24 44	
	Moon II. L.	- -	14 38 23·70	153·41	72·57	20 22 23·6	− 622·8
	Moon II. U.	20·3	15 9 17·45	155·46	73·11	22 15 48·6	509·8
	δ Scorpii - -	2½	15 52 9·19			22 13	
	*β*¹ Scorpii - -	2	15 57 23·46			S. 19 25	
2	*δ* Scorpii - -	2½	15 52 9·22			S. 22 13	
	*β*¹ Scorpii - -	2	15 57 23·49			19 25	
	Moon II. L.	- -	15 40 32·25	156·87	73·48	23 45 46·8	− 388·8
	Moon II. U.	21·3	16 11 58·93	157·41	73·63	24 50 59·2	262·8
	α Scorpii - -	1½	16 20 55·28			26 7	
	τ Scorpii - -	3½	16 27 16·04			S. 27 55	
3	*α* Scorpii - -	1½	16 20 55·32			S. 26 7	
	τ Scorpii - -	3½	16 27 16·08			27 55	
	Moon II. L.	- -	16 43 26·03	156·93	73·52	25 30 47·0	− 135·2
	Moon II. U.	22·3	17 14 40·94	155·38	73·14	25 45 11·8	− 9·5
	4 Sagittarii	5	17 51 19·87			23 48	
	*μ*¹ Sagittarii	4	18 5 28·34			S. 21 5	
4	4 Sagittarii	5	17 51 19·90			S. 23 48	
	*μ*¹ Sagittarii	4	18 5 28·37			21 5	
	Moon II. L.	- -	17 45 31·11	152·82	72·51	25 34 53·0	+ 111·5
	Moon II. U.	23·4	18 15 45·26	149·41	71·65	25 1 5·0	225·2
	φ Sagittarii	3½	18 36 59·62			27 8	
	σ Sagittarii	2½	18 46 40·05			S. 26 28	
5	*φ* Sagittarii	3½	18 36 59·65			S. 27 8	
	σ Sagittarii	2½	18 46 40·08			26 28	
	Moon II. L.	- -	18 45 14·40	145·36	70·62	24 5 29·5	+ 329·2
	Moon II. U.	24·4	19 13 52·36	140·92	69·46	22 50 6·6	+ 422·8
	*h*¹ Sagittarii	4½	19 28 15·62			S. 25 11	

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			h m s	s	s	° ′ ″	″
Mar. 5	ω Sagittarii	5	19 47 20·21			S. 26 40	
6	h^2 Sagittarii	4½	19 28 15·65			S. 25 11	
	ω Sagittarii	5	19 47 20·24			26 40	
	Moon II. L.	- -	19 41 35·93	136·34	68·25	21 17 7·1	+505·2
	Moon II. U.	25·4	20 8 24·63	131·81	67·02	19 28 45·7	576·4
	ρ Capricorni	5	20 20 56·35			18 16	
	τ^2 Capricorni	5	20 31 30·48			S. 15 26	
7	Moon II. L.	- -	20 34 20·27	127·52	65·85	S. 17 27 16·2	+636·7
	Moon II. U.	26·5	20 59 26·52	123·59	64·76	15 14 46·8	686·5
8	Moon II. L.	- -	21 23 48·30	120·12	63·78	S. 12 53 18·7	+726·6
	Moon II. U.	27·5	21 47 31·46	117·16	62·93	10 24 45·8	757·4
9	Moon II. L.	- -	22 10 42·37	114·75	62·23	S. 7 50 54·7	+779·7
	Moon II. U.	28·5	22 33 27·70	112·90	61·69	5 13 24·7	794·0
10	Moon II. L.	- -	22 55 54·27	111·62	61·31	S. 2 33 49·5	+800·7
	Moon II. U.	29·6	23 18 8·84	110·90	61·09	N. 0 6 22·2	800·1
11	Moon I. L.	- -	23 38 16·04	110·73	61·04	N. 2 45 45·9	+792·7
12	Moon I. U.	1·0	0 0 26·43	111·09	61·15	N. 5 22 58·9	+778·4
	Moon I. L.	- -	0 22 44·24	111·97	61·42	7 56 40·5	757·4
13	Moon I. U.	2·0	0 45 15·67	113·35	61·83	N. 10 25 29·5	+729·7
	Moon I. L.	- -	1 8 6·62	115·22	62·38	12 48 5·4	695·1
14	Moon I. U.	3·0	1 31 22·58	117·52	63·05	N. 15 3 5·0	+653·6
	Moon I. L.	- -	1 55 8·52	120·20	63·83	17 9 3·7	604·9
15	β Arietis - -	2½	1 46 58·53			N. 20 8	
	α Arietis - -	2	1 59 21·20			22 48	
	Moon I. U.	4·0	2 19 28·68	123·21	64·68	19 4 34·1	+548·9
	Moon I. L.	- -	2 44 26·39	126·44	65·59	20 48 6·5	485·2
	41 Arietis - -	4	2 41 49·39			26 41	
	ε Arietis - -	4½	2 51 17·05			N. 20 47	
16	41 Arietis - -	4	2 41 49·38			N. 26 41	
	ε Arietis - -	4½	2 51 17·04			20 47	
	Moon I. U.	5·1	3 10 3·79	129·80	66·52	22 18 9·0	+413·9
	Moon I. L.	- -	3 36 21·55	133·15	67·43	23 33 10·2	335·0
	η Tauri - -	3	3 39 14·53			23 40	
	A^1 Tauri - -	4½	3 56 30·13			N. 21 42	
17	η Tauri - -	3	3 39 14·52			N. 23 40	
	A^1 Tauri - -	4½	3 56 30·12			21 42	
	Moon I. U.	6·1	4 3 18·73	136·35	68·29	24 31 39·7	+248·7
	Moon I. L.	- -	4 30 52·60	139·24	69·06	25 12 11·9	155·6
	ε Tauri - -	3½	4 20 31·53			18 52	
	τ Tauri - -	4½	4 33 55·80			N. 22 41	
18	ε Tauri - -	3½	4 20 31·51			N. 18 52	
	τ Tauri - -	4½	4 33 55·78			22 41	
	Moon I. U.	7·1	4 58 58·66	141·69	69·71	25 33 29·3	+ 56·4
	Moon I. L.	- -	5 27 30·88	143·58	70·19	N. 25 34 27·5	− 47·5

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			h m s	s	s	° ′ ″	″
Mar. 18	β Tauri - -	2	5 17 32·19			N. 28 29	
	ζ Tauri - -	3½	5 29 22·17			21 3	
19	β Tauri - -	2	5 17 32·17			N. 28 29	
	ζ Tauri - -	3½	5 29 22·16			21 3	
	Moon I. U.	8·2	5 56 22·13	144·85	70·51	25 14 17·4	— 154·7
	Moon I. L.	- -	6 25 24·66	145·46	70·66	24 32 29·9	263·4
	η Geminor.	3½	6 6 31·22			22 33	
	μ Geminor.	3	6 14 35·11			N. 22 35	
20	η Geminor.	3½	6 6 31·22			N. 22 33	
	μ Geminor.	3	6 14 35·09			22 35	
	Moon I. U.	9·2	6 54 30·86	145·47	70·65	23 28 58·4	— 371·6
	Moon I. L.	- -	7 23 33·97	144·97	70·50	22 4 0·1	477·5
	υ Geminor.	4½	7 27 23·84			27 12	
	κ Geminor.	3½	7 36 5·64			N. 24 44	
21	υ Geminor.	4½	7 27 23·82			N. 27 12	
	κ Geminor.	3½	7 36 5·64			24 44	
	Moon I. U.	10·2	7 52 28·65	144·10	70·26	20 18 15·2	— 579·0
	Moon I. L.	- -	8 21 11·43	143·02	69·95	18 12 48·6	674·2
	40 Cancri - -	6	8 32 14·26			20 28	
	δ Cancri - -	4	8 36 49·64			N. 18 40	
22	40 Cancri - -	6	8 32 14·25			N. 20 28	
	δ Cancri - -	4	8 36 49·63			18 40	
	Moon I. U.	11·3	8 49 40·87	141·90	69·64	15 49 7·7	— 761·1
	Moon I. L.	- -	9 17 57·64	140·93	69·36	13 9 1·2	838·1
	h Leonis - *	6	9 24 33·10			10 20	
	o Leonis - *	3½	9 33 46·79			N. 10 31	
23	h Leonis - *	6	9 24 33·09			N. 10 20	
	o Leonis - *	3½	9 33 46·78			10 31	
	Moon I. U.	12·3	9 46 4·33	140·25	69·15	10 14 40·5	— 903·3
	Moon I. L.	- -	10 14 5·22	139·99	69·08	7 8 35·7	955·1
	α Leonis - *	1½	10 1 0·82			12 39	
	ρ Leonis - *	4	10 25 32·28			N. 10 1	
24	α Leonis - *	1½	10 1 0·81			N. 12 39	
	ρ Leonis - *	4	10 25 32·28			10 1	
	Moon I. U.	13·3	10 42 6·03	140·24	69·10	3 53 37·4	— 991·9
	Moon I. L.	- -	11 10 13·33	141·08	69·29	N. 0 32 55·3	1012·2
	φ Leonis - -	4½	11 9 38·55			S. 2 54	
	e Leonis - -	5	11 23 15·63			S. 2 14	
25	φ Leonis - -	4½	11 9 38·55			S. 2 54	
	e Leonis - -	5	11 23 15·63			2 14	
	Moon I. U.	14·4	11 38 34·36	142·53	69·65	2 50 4·6	— 1014·7
	Moon I. L.	- -	12 7 16·41	144·58	70·16	6 11 41·2	— 998·2
	f Virginis -	6	12 29 40·93			5 4	
	B.A.C. 4259	6	12 32 15·60			S. 7 16	
26	f Virginis -	6	12 29 40·93			S. 5 4	
	B.A.C. 4259	6	12 32 15·61			S. 7 16	

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			h m s	s	s	° ′ ″	″
Mar. 26	Moon II. U.	15·4	12 38 47·93	147·27	70·81	S. 9 28 3·1	−962·1
	α Virginis -	1	13 17 55·32			10 26	
	h Virginis -	5	13 25 41·97			S. 9 27	
27	α Virginis -	1	13 17 55·33			S. 10 26	
	h Virginis -	5	13 25 41·98			9 27	
	Moon II. L.	- -	13 8 32·83	150·27	71·56	12 35 13·6	−906·3
	Moon II. U.	16·4	13 38 55·29	153·49	72·37	15 29 18·1	831·3
	B.A.C. 4722	6	14 7 48·09			17 33	
	B.A.C. 4767	6	14 16 56·26			S. 24 10	
28	B.A.C. 4722	6	14 7 48·10			S. 17 33	
	B.A.C. 4767	6	14 16 56·29			24 10	
	Moon II. L.	- -	14 9 56·41	156·67	73·17	18 6 32·3	−738·2
	Moon II. U.	17·5	14 41 33·93	159·51	73·89	20 23 31·6	629·2
	20 Libræ - -	3½	14 55 59·57			24 44	
	ι Libræ - -	4½	15 4 21·27			S. 19 16	
29	20 Libræ - -	3½	14 55 59·60			S. 24 44	
	ι Libræ - -	4½	15 4 21·30			19 16	
	Moon II. L.	- -	15 13 41·98	161·70	74·45	22 17 23·2	−507·5
	Moon II. U.	18·5	15 46 10·81	162·93	74·79	23 45 54·7	376·6
	ν Scorpii - -	4	16 3 58·06			19 6	
	σ Scorpii - -	3½	16 12 47·52			S. 25 15	
30	ν Scorpii - -	4	16 3 58·08			S. 19 6	
	σ Scorpii - -	3½	16 12 47·55			25 15	
	Moon II. L.	- -	16 18 47·46	162·97	74·83	24 47 41·9	−240·9
	Moon II. U.	19·6	16 51 16·89	161·71	74·57	25 22 15·0	−105·0
	θ Ophiuchi -	3½	17 13 31·05			24 51	
	b Ophiuchi -	5	17 17 55·48			S. 24 3	
31	θ Ophiuchi -	3½	17 13 31·08			S. 24 51	
	b Ophiuchi -	5	17 17 55·51			24 3	
	Moon II. L.	- -	17 23 23·56	159·19	73·99	25 29 57·4	+ 26·9
	Moon II. U.	20·6	17 54 53·12	155·57	73·13	25 11 59·1	151·2
	φ Sagittarii	3½	18 37 0·51			27 8	
	σ Sagittarii	2½	18 46 40·93			S. 26 28	
Apr. 1	φ Sagittarii	3½	18 37 0·55			S. 27 8	
	σ Sagittarii	2½	18 46 40·97			26 28	
	Moon II. L.	- -	18 25 33·77	151·09	72·05	24 30 8·4	+265·3
	Moon II. U.	21·6	18 55 17·11	146·07	70·80	23 26 39·5	367·4
	ψ Sagittarii	5	19 7 2·92			25 30	
	h² Sagittarii	4½	19 28 16·46			S. 25 11	
2	ψ Sagittarii	5	19 7 2·95			S. 25 30	
	h² Sagittarii	4½	19 28 16·49			25 11	
	Moon II. L.	- -	19 23 58·51	140·81	69·47	22 4 0·0	+457·0
	Moon II. U.	22·7	19 51 36·75	135·59	68·11	20 24 41·8	+534·0
	α¹ Capricorni	3½	20 9 57·95			12 56	
	ρ Capricorni	5	20 20 57·07			S. 18 16	
3	α¹ Capricorni	3½	20 9 57·98			S. 12 56	

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			h m s	s	s	° ′ ″	″
Apr. 3	ρ Capricorni	5	20 20 57·10			S. 18 16	
	Moon II.L.	- -	20 18 13·64	130·62	66·79	18 31 12·9	+598·9
	Moon II.U.	23·7	20 43 53·10	126·04	65·55	16 25 52·2	652·7
	θ Capricorni	4	20 58 9·13			17 47	
	ι Capricorni	4½	21 14 31·37			S. 17 25	
4	θ Capricorni	4	20 58 9·15			S. 17 47	
	ι Capricorni	4½	21 14 31·40			17 25	
	Moon II.L.	- -	21 8 40·71	121·99	64·42	14 10 48·1	+696·3
	Moon II.U.	24·8	21 32 43·15	118·52	63·43	11 47 57·4	730·6
	ι Aquarii -	4	21 58 56·54			14 33	
	θ Aquarii -	4½	22 9 30·70			S. 8 28	
5	ι Aquarii -	4	21 58 56·56			S. 14 33	
	θ Aquarii -	4½	22 9 30·72			8 28	
	Moon II.L.	- -	21 56 7·56	115·65	62·60	9 19 6·5	+756·5
	Moon II.U.	25·8	22 19 1·37	113·42	61·93	6 45 51·6	774·7
	κ Aquarii -	5	22 30 34·17			4 57	
	λ Aquarii -	4	22 45 22·36			S. 8 19	
6	Moon II.L.	- -	22 41 32·10	111·80	61·44	S. 4 9 42·7	+785·6
	Moon II.U.	26·8	23 3 47·14	110·80	61·12	S. 1 32 3·8	789·8
7	Moon II.L.	- -	23 25 53·71	110·39	60·96	N. 1 5 45·1	+787·3
	Moon II.U.	27·9	23 47 58·83	110·55	60·98	3 42 24·9	778·3
8	Moon II.L.	- -	0 10 9·19	111·26	61·15	N. 6 16 38·0	+762·8
	Moon II.U.	28·9	0 32 31·24	112·50	61·48	8 47 5·5	740·6
9	Moon II.L.	- -	0 55 10·98	114·21	61·95	N.11 12 25·8	+711·6
10	Moon I. U.	0·2	1 16 8·90	116·25	62·54	N.13 31 15·3	+675·5
	Moon I. L.	- -	1 39 38·68	118·77	63·24	15 42 7·8	632·0
11	Moon I. U.	1·2	2 3 40·66	121·60	64·02	N.17 43 32·8	+580·9
	Moon I. L.	- -	2 28 18·04	124·66	64·87	19 33 58·5	522·1
12	Moon I. U.	2·3	2 53 32·87	127·82	65·74	N.21 11 51·1	+455·4
	Moon I. L.	- -	3 19 25·71	130·97	66·60	22 35 37·3	381·0
13	Moon I. U.	3·3	3 45 55·56	133·96	67·42	N.23 43 47·1	+299·4
	Moon I. L.	- -	4 12 59·63	136·65	68·14	24 34 56·4	211·1
14	φ Tauri - -	5	4 11 49·53			N.27 1	
	υ^1 Tauri - -	4½	4 18 0·66			22 30	
	Moon I.U.	4·3	4 40 33·48	138·90	68·76	25 7 50·5	+117·1
	Moon I.L.	- -	5 8 31·16	140·61	69·23	25 21 28·0	+ 18·5
	ι Tauri - -	5	4 54 48·57			21 23	
	β Tauri - -	2	5 17 31·75			N.28 29	
15	ι Tauri - -	5	4 54 48·56			N.21 23	
	β Tauri - -	2	5 17 31·74			28 29	
	Moon I. U.	5·4	5 36 45·67	141·70	69·54	25 15 3·7	— 83·0
	Moon I. L.	- -	6 5 9·51	142·16	69·68	24 48 11·8	—185·8
	η Geminor.	3½	6 6 30·76			22 33	
	μ Geminor.	3	6 14 34·65			N.22 35	

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			h m s	s	s	° ′ ″	″
Apr. 16	η Geminor.	3½	6 6 30·75			N.22 33	
	μ Geminor.	3	6 14 34·63			22 35	
	Moon I. U.	6·4	6 33 35·26	142·03	69·67	24 0 46·4	−288·3
	Moon I. L.	- -	7 1 56·32	141·40	69·53	22 53 1·3	388·7
	ζ Geminor.	4	6 55 53·61			20 46	
	δ Geminor.	3½	7 11 51·06			N.22 14	
17	ζ Geminor.	4	6 55 53·59			N.20 46	
	δ Geminor.	3½	7 11 51·04			22 14	
	Moon I. U.	7·4	7 30 7·47	140·41	69·28	21 25 30·8	−485·6
	Moon I. L.	- -	7 58 5·29	139·20	68·97	19 39 6·1	577·5
	g Geminor.	5½	7 38 6·32			18 51	
	μ^2 Cancri - -	5	7 59 37·04			N.21 59	
18	g Geminor.	5½	7 38 6·31			N.18 51	
	μ^2 Cancri - -	5	7 59 37·02			21 59	
	Moon I. U.	8·5	8 25 48·22	137·96	68·65	17 34 54·9	−663·2
	Moon I. L.	- -	8 53 16·84	136·85	68·35	15 14 19·9	741·3
	α Cancri - *	4	8 50 55·20			12 24	
	83 Cancri - -	6	9 11 15·49			N.18 17	
19	α Cancri - *	4	8 50 55·18			N.12 24	
	83 Cancri - -	6	9 11 15·48			18 17	
	Moon I. U.	9·5	9 20 33·60	136·01	68·12	12 38 57·1	−811·0
	Moon I. L.	- -	9 47 42·69	135·59	67·99	9 50 35·6	870·9
	π Leonis - *	5	9 52 54·43			8 43	
	α Leonis - *	1½	10 1 0·54			N.12 39	
20	π Leonis - *	5	9 52 54·42			N. 8 43	
	α Leonis - *	1½	10 1 0·53			12 39	
	Moon I. U.	10·5	10 14 49·80	135·70	67·99	6 51 20·0	−919·8
	Moon I. L.	- -	10 42 1·77	136·41	68·15	3 43 30·1	956·4
	ρ Leonis - *	4	10 25 32·05			10 1	
	d Leonis - *	5	10 53 25·57			N. 4 22	
21	ρ Leonis - *	4	10 25 32·04			N.10 1	
	d Leonis - *	5	10 53 25·56			4 22	
	Moon I. U.	11·6	11 9 26·32	137·80	68·49	N. 0 29 42·9	−979·1
	Moon I. L.	- -	11 37 11·74	139·89	68·99	S. 2 47 6·3	986·4
	e Leonis - -	5	11 23 15·53			2 14	
	υ Leonis - -	4½	11 29 52·76			S. 0 3	
22	e Leonis - -	5	11 23 15·53			S. 2 14	
	υ Leonis - -	4½	11 29 52·75			0 3	
	Moon I. U.	12·6	12 5 26·36	142·66	69·68	6 3 41·8	−976·6
	Moon I. L.	- -	12 34 18·11	146·06	70·51	9 16 30·6	948·3
	χ Virginis -	5	12 32 7·79			7 14	
	ψ Virginis -	5	12 47 10·75			S. 8 47	
23	χ Virginis -	5	12 32 7·79			S. 7 14	
	ψ Virginis -	5	12 47 10·75			8 47	
	Moon I. U.	13·6	13 3 53·80	149·96	71·46	12 21 42·7	−900·3
	Moon I. L.	- -	13 34 18·25	154·15	72·48	15 15 17·8	−832·1
	61 Virginis -	5	13 11 11·48			S. 17 32	

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			h m s	s	s	° ′ ″	″
Apr. 23	α Virginis -	1	13 17 55·53			S. 10 26	
24	61 Virginis -	5	13 11 11·48			S. 17 32	
	α Virginis -	1	13 17 55·54			10 26	
	Moon I. U.	14·7	14 5 33·52	158·37	73·49	17 53 12·9	−743·8
	α^2 Libræ - -	2½	14 43 14·91			15 28	
	ι^1 Libræ - -	4½	15 4 21·77			S. 19 16	
25	α^2 Libræ - -	2½	14 43 14·92			S. 15 28	
	ι^1 Libræ - -	4½	15 4 21·79			19 16	
	Moon II. L.	- -	14 40 6·61	162·39	74·43	20 11 35·1	−636·9
	Moon II. U.	15·7	15 12 54·87	165·49	75·18	22 6 55·3	514·0
	β^1 Scorpii - -	2	15 57 24·90			19 25	
	ν Scorpii - -	4	16 3 58·69			S. 19 6	
26	β^1 Scorpii- -	2	15 57 24·92			S. 19 25	
	ν Scorpii - -	4	16 3 58·71			19 6	
	Moon II. L.	- -	15 46 13·94	167·46	75·68	23 36 24·3	−379·1
	Moon II. U.	16·7	16 19 48·15	167·98	75·84	24 38 7·0	237·2
	θ Ophiuchi -	3½	17 13 31·84			24 51	
	δ Ophiuchi -	4	17 18 32·29			S. 29 44	
27	θ Ophiuchi -	3½	17 13 31·86			S. 24 51	
	δ Ophiuchi -	4	17 18 32·32			29 44	
	Moon II. L.	- -	16 53 19·00	166·89	75·62	25 11 12·0	− 93·9
	Moon II. U.	17·8	17 26 27·21	164·22	75·02	25 15 55·2	+ 45·5
	δ Sagittarii	3½	18 12 8·99			29 53	
	λ Sagittarii	3	18 19 26·69			S. 25 29	
28	δ Sagittarii	3½	18 12 9·02			S. 29 53	
	λ Sagittarii	3	18 19 26·72			25 29	
	Moon II. L.	- -	17 58 54·95	160·19	74·10	24 53 33·0	+176·3
	Moon II. U.	18·8	18 30 27·73	155·13	72·90	24 6 10·4	295·1
	σ Sagittarii	2½	18 46 41·87			26 28	
	π Sagittarii	3	19 1 32·53			S. 21 14	
29	σ Sagittarii	2½	18 46 41·90			S. 26 28	
	π Sagittarii	3	19 1 32·57			21 14	
	Moon II. L.	- -	19 0 55·48	149·43	71·53	22 56 25·7	+399·8
	Moon II. U.	19·8	19 30 12·89	143·47	70·06	21 27 12·8	489·8
	f Sagittarii	5	19 38 17·72			20 5	
	ω Sagittarii	5	19 47 21·97			S. 26 40	
30	f Sagittarii	5	19 38 17·75			S. 20 5	
	ω Sagittarii	5	19 47 22·00			26 40	
	Moon II. L.	- -	19 58 18·88	137·58	68·57	19 41 28·3	+565·2
	Moon II. U.	20·9	20 25 16·02	132·02	67·14	17 42 1·2	627·1
	θ Capricorni	4	20 58 9·94			17 47	
	ν Aquarii -	4½	21 2 3·10			S. 11 56	
May 1	θ Capricorni	4	20 58 9·97			S. 17 47	
	ν Aquarii -	4½	21 2 3·13			11 56	
	Moon II. L.	- -	20 51 9·34	126·97	65·80	15 31 26·9	+676·7
	Moon II. U.	21·9	21 16 5·64	122·53	64·60	S. 13 12 4·3	+715·4

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			h m s	s	s	° ′ ″	″
May 1	β Aquarii -	3	21 24 16·15			S. 6 11	
	ξ Aquarii -	4½	21 30 22·85			8 28	
2	β Aquarii -	3	21 24 16·18			S. 6 11	
	ξ Aquarii -	4½	21 30 22·88			8 28	
	Moon II. L. - -		21 40 12·74	118·77	63·56	10 45 56·5	+744·4
	Moon II. U.	22·9	22 3 38·97	115·72	62·69	8 14 51·6	765·1
	γ Aquarii -	3½	22 14 30·15			2 5	
	η Aquarii -	3½	22 28 14·21			S. 0 50	
3	γ Aquarii -	3½	22 14 30·18			S. 2 5	
	η Aquarii -	3½	22 28 14·24			0 50	
	Moon II. L. - -		22 26 32·81	113·38	62·01	5 40 24·7	+778·2
	Moon II. U.	24·0	22 49 2·70	111·72	61·51	S. 3 4 1·6	784·6
	γ Piscium -	4	23 9 58·86			N. 2 32	
	κ Piscium -	4½	23 19 49·65			N. 0 30	
4	γ Piscium -	4	23 9 58·89			N. 2 32	
	κ Piscium -	4½	23 19 49·68			N. 0 30	
	Moon II. L. - -		23 11 16·84	110·75	61·20	S. 0 27 0·9	+784·6
	Moon II. U.	25·0	23 33 23·21	110·42	61·07	N. 2 9 23·3	778·5
	26 Piscium *	6	23 48 2·42			6 18	
	ω Piscium *	4	23 52 11·60			N. 6 6	
5	Moon II. L. - -		23 55 29·43	110·72	61·11	N. 4 43 59·1	+766·5
	Moon II. U.	26·0	0 17 42·80	111·61	61·33	7 15 34·1	748·4
6	Moon II. L. - -		0 40 10·19	113·05	61·70	N. 9 42 54·3	+724·0
	Moon II. U.	27·1	1 2 58·02	115·00	62·21	12 4 42·5	692·9
7	Moon II. L. - -		1 26 12·11	117·41	62·84	N.14 19 36·5	+654·9
	Moon II. U.	28·1	1 49 57·47	120·21	63·58	16 26 9·8	609·4
8	Moon II. L. - -		2 14 18·24	123·30	64·40	N.18 22 50·9	+556·1
	Moon II. U.	29·2	2 39 17·22	126·56	65·27	20 8 3·5	494·7
9	Moon II. L. - -		3 4 55·75	129·86	66·14	N.21 40 10·4	+425·1
10	Moon I. U.	0·5	3 28 59·48	132·92	66·98	N.22 57 34·9	+347·6
	Moon I. L. - -		3 55 52·41	135·84	67·74	23 58 44·0	262·7
11	Moon I. U.	1·6	4 23 17·99	138·33	68·40	N.24 42 13·6	+171·3
	Moon I. L. - -		4 51 10·13	140·25	68·91	25 6 53·6	+ 74·6
12	Moon I. U.	2·6	5 19 21·21	141·48	69·25	N.25 11 50·6	− 25·6
	Moon I. L. - -		5 47 42·76	141·99	69·41	24 56 32·5	127·6
13	χ^2 Orionis -	4½	5 46 10·26			N.20 15	
	η Geminor.	3½	6 6 30·49			22 33	
	Moon I. U.	3·6	6 16 6·18	141·80	69·39	24 20 50·3	−229·3
	Moon I. L. - -		6 44 23·44	140·98	69·22	23 24 58·4	328·9
	ε Geminor.	3½	6 35 24·25			25 16	
	ζ Geminor.	4	6 55 53·28			N.20 46	
14	ε Geminor.	3½	6 35 24·24			N.25 16	
	ζ Geminor.	4	6 55 53·27			20 46	
	Moon I. U.	4·7	7 12 27·84	139·68	68·92	N.22 9 32·4	−424·6

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			h m s	s	s	° ′ ″	″
May 14	Moon L.L.	- -	7 40 14·51	138·06	68·53	N.20 35 28·0	−515·1
	κ Geminor.	3½	7 36 4·79			24 44	
	μ^3 Cancri - -	5	7 59 36·65			N.21 59	
15	κ Geminor.	3½	7 36 4·78			N.24 44	
	μ^3 Cancri - -	5	7 59 36·64			21 59	
	Moon I. U.	5·7	8 7 40·72	136·30	68·11	18 43 55·5	−599·1
	Moon L.L.	- -	8 34 45·96	134·60	67·68	16 36 18·3	675·8
	29 Cancri - -	6	8 20 53·63			14 40	
	η Cancri - -	6	8 24 41·81			N.20 55	
16	29 Cancri - -	6	8 20 53·62			N.14 40	
	η Cancri - -	6	8 24 41·79			20 55	
	Moon I. U.	6·7	9 1 31·87	133·10	67·31	14 14 9·2	−744·3
	Moon L.L.	- -	9 28 1·95	131·98	67·03	11 39 9·4	804·1
	10 Leonis - *	5½	9 29 54·37			7 27	
	ε Leonis - *	3½	9 33 46·11			N.10 31	
17	10 Leonis - *	5½	9 29 54·36			N. 7 27	
	ε Leonis - *	3½	9 33 46·10			10 31	
	Moon I. U.	7·8	9 54 21·45	131·36	66·87	8 53 7·3	−854·6
	Moon L.L.	- -	10 20 36·93	131·33	66·86	5 57 58·7	895·1
	45 Leonis - *	6	10 20 20·59			10 28	
	ρ Leonis - *	4	10 25 31·74			N.10 1	
18	45 Leonis - *	6	10 20 20·58			N.10 28	
	ρ Leonis - *	4	10 25 31·73			10 1	
	Moon I. U.	8·8	10 46 56·03	131·98	67·03	N. 2 55 49·2	−924·6
	Moon I.L.	- -	11 13 27·30	133·36	67·37	S. 0 11 5·1	942·4
	ε Leonis - -	5	11 23 15·31			2 14	
	υ Leonis - -	4½	11 29 52·55			S. 0 3	
19	ε Leonis - -	5	11 23 15·30			S. 2 14	
	υ Leonis - -	4½	11 29 52·54			0 3	
	Moon I. U.	9·8	11 40 19·73	135·51	67·91	3 20 14·8	−947·0
	Moon I. L.	- -	12 7 42·48	138·41	68·64	S. 6 28 54·0	937·0
	η Virginis -	3½	12 12 50·47			N. 0 6	
	q Virginis -	6	12 26 39·34			S. 8 40	
20	η Virginis -	3½	12 12 50·47			N. 0 6	
	q Virginis -	6	12 26 39·34			S. 8 40	
	Moon I. U.	10·9	12 35 44·49	142·04	69·54	9 33 59·5	−911·1
	Moon I.L.	- -	13 4 33·76	146·27	70·58	12 32 11·3	867·8
	α Virginis -	1	13 17 55·53			10 26	
	73 Virginis -	6	13 24 36·72			S.18 1	
21	α Virginis -	1	13 17 55·53			S.10 26	
	73 Virginis -	6	13 24 36·72			18 1	
	Moon I. U.	11·9	13 34 16·67	150·94	71·71	15 19 52·7	−805·9
	Moon I.L.	- -	14 4 56·96	155·78	72·87	17 53 17·2	−724·9
	89 Virginis -	5	13 42 22·84			17 26	
	B.A.C. 4700	5½	14 3 18·54			S.15 39	
22	89 Virginis -	5	13 42 22·84			S.17 26	

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			h m s	s	s	° ′ ″	″
May 22	B.A.C. 4700	5½	14 3 18·54			S. 15 39	
	Moon I. U.	12·9	14 36 34·72	160·45	73·97	20 8 36·0	−625·1
	Moon I. L.	- -	15 9 5·28	164·51	74·92	22 2 12·4	508·2
	20 Libræ - -	3½	14 56 0·35			24 44	
	ι^1 Libræ - -	4½	15 4 22·07			S. 19 16	
23	20 Libræ - -	3½	14 56 0·35			S. 24 44	
	ι^1 Libræ - -	4½	15 4 22·07			19 16	
	Moon I. U.	14·0	15 42 18·80	167·53	75·61	23 30 57·5	−377·2
	π Scorpii - -	3	15 50 30·87			25 43	
	β^2 Scorpii - -	2	15 57 25·33			S. 19 25	
24	π Scorpii - -	3	15 50 30·88			S. 25 43	
	β^2 Scorpii - -	2	15 57 25·34			19 25	
	Moon II. L.	- -	16 18 32·23	169·14	75·98	24 32 27·4	−236·6
	Moon II. U.	15·0	16 52 22·65	168·95	75·96	25 5 19·5	− 91·9
	θ Ophiuchi -	3½	17 13 32·48			24 51	
	d Ophiuchi -	4	17 18 32·98			S. 29 44	
25	θ Ophiuchi -	3½	17 13 32·50			S. 24 51	
	d Ophiuchi -	4	17 18 33·00			29 44	
	Moon II. L.	- -	17 26 0·23	167·01	75·52	25 9 19·9	+ 51·0
	Moon II. U.	16·0	17 59 4·58	163·46	74·72	24 45 24·2	186·6
	φ Sagittarii	3½	18 37 2·24			27 8	
	σ Sagittarii	2½	18 46 42·68			S. 26 28	
26	φ Sagittarii	3½	18 37 2·27			S. 27 8	
	σ Sagittarii	2½	18 46 42·70			26 28	
	Moon II. L.	- -	18 31 18·25	158·63	73·58	23 55 27·5	+310·5
	Moon II. U.	17·1	19 2 28·37	152·94	72·24	22 42 8·5	420·0
	λ^2 Sagittarii	4½	19 28 18·24			25 11	
	f Sagittarii	5	19 38 18·56			S. 20 5	
27	λ^2 Sagittarii	4½	19 28 18·27			S. 25 11	
	f Sagittarii	5	19 38 18·59			20 5	
	Moon II. L.	- -	19 32 27·08	146·82	70·75	21 8 31·0	+513·5
	Moon II. U.	18·1	20 1 11·87	149·67	69·23	19 17 47·5	591·1
	β Capricorni	3	20 13 15·11			15 13	
	ρ Capricorni	5	20 20 58·81			S. 18 16	
28	β Capricorni	3	20 13 15·14			S. 15 13	
	ρ Capricorni	5	20 20 58·84			18 16	
	Moon II. L.	- -	20 28 44·11	134·78	67·74	17 13 5·1	+653·5
	Moon II. U.	19·1	20 55 8·45	129·38	66·35	14 57 17·2	702·3
	ι Capricorni	4½	21 14 33·07			17 25	
	γ Capricorni	3½	21 32 25·96			S. 17 17	
29	ι Capricorni	4½	21 14 33·10			S. 17 25	
	γ Capricorni	3½	21 32 25·99			17 17	
	Moon II. L.	- -	21 20 31·59	124·60	65·10	12 32 59·1	+738·9
	Moon II. U.	20·2	21 45 1·61	120·53	64·00	10 2 26·9	+764·9
	θ Aquarii -	4½	22 9 32·26			8 28	
	γ Aquarii -	3½	22 14 30·98			S. 2 5	

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			h m s	s	s	° ′ ″	″
May 30	θ Aquarii -	4½	22 9 32·29			S. 8 28	
	γ Aquarii -	3½	22 14 31·01			2 5	
	Moon II. L.	- -	22 8 47·23	117·20	63·09	7 27 39·1	+781·7
	Moon II. U.	21·2	22 31 57·37	114·62	62·37	S. 4 50 17·4	790·7
	β Piscium -	4½	22 56 50·46			N. 3 4	
	φ Aquarii -	4½	23 7 9·54			S. 6 48	
31	β Piscium -	4½	22 56 50·49			N. 3 4	
	φ Aquarii -	4½	23 7 9·57			S. 6 48	
	Moon II. L.	- -	22 54 41·02	112·78	61·85	S. 2 11 51·7	+792·6
	Moon II. U.	22·2	23 17 6·88	111·65	61·52	N. 0 26 18·8	788·2
	ι Piscium *	4½	23 32 50·07			4 52	
	ω Piscium *	4	23 52 12·35			N. 6 6	
June 1	ι Piscium *	4½	23 32 50·10			N. 4 52	
	ω Piscium *	4	23 52 12·38			6 6	
	Moon II. L.	- -	23 39 23·45	111·23	61·38	3 3 0·8	+777·9
	Moon II. U.	23·3	0 1 38·91	111·46	61·43	5 37 4·7	761·9
	d Piscium *	5½	0 13 28·58			7 25	
	B.A.C. 149 *	6	0 28 45·43			N. 12 27	
2	d Piscium *	5½	0 13 28·62			N. 7 25	
	B.A.C. 149 *	6	0 28 45·46			12 27	
	Moon II. L.	- -	0 24 1·02	112·33	61·64	8 7 22·4	+740·2
	Moon II. U.	24·3	0 46 37·18	113·80	62·02	10 32 44·7	712·5
	ρ Piscium -	5	1 18 47·48			18 27	
	η Piscium -	3½	1 24 4·40			N. 14 38	
3	ρ Piscium -	5	1 18 47·51			N. 18 27	
	η Piscium -	3½	1 24 4·43			14 38	
	Moon II. L.	- -	1 9 34·28	115·81	62·55	12 51 58·1	+678·6
	Moon II. U.	25·3	1 32 58·61	118·32	63·21	15 3 44·8	638·0
	β Arietis - -	2½	1 46 59·43			20 8	
	α Arietis - -	2	1 59 22·02			N. 22 48	
4	Moon II. L.	- -	1 56 55·65	121·25	63·98	N. 17 6 41·7	+590·2
	Moon II. U.	26·4	2 21 29·82	124·49	64·82	18 59 19·4	534·7
5	Moon II. L.	- -	2 46 44·23	127·93	65·70	N. 20 40 3·1	+471·2
	Moon II. U.	27·4	3 12 40·38	131·42	66·60	22 7 14·1	399·3
6	Moon II. L.	- -	3 39 17·70	134·77	67·45	N. 23 19 13·7	+319·3
	Moon II. U.	28·4	4 6 33·54	137·80	68·21	24 14 26·7	231·6
7	Moon II. L.	- -	4 34 22·96	140·33	68·85	N. 24 51 26·5	+137·3
	Moon II. U.	29·5	5 2 38·95	142·20	69·32	25 9 1·3	+ 37·7
8	Moon I. L.	- -	5 28 53·64	143·28	69·61	N. 25 6 18·2	— 65·3
9	Moon I. U.	1·0	5 57 35·72	143·60	69·70	N. 24 42 49·5	—169·5
	Moon I. L.	- -	6 26 16·89	143·13	69·59	23 58 34·2	272·7
10	Moon I. U.	2·0	6 54 48·20	141·98	69·33	N. 22 53 57·5	—372·7
	Moon I. L.	-	7 23 2·34	140·30	68·92	21 29 50·6	467·5
11	Moon I. U.	3·0	7 50 54·01	138·28	68·44	N. 19 47 25·0	—555·5

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			h m s	s	s	° ′ ″	″
June 11	Moon I. L.	- -	8 18 20·36	136·11	67·91	N.17 48 10·8	−635·5
12	η Cancri - -	6	8 24 41·59			N.20 55	
	γ Cancri - -	4½	8 35 15·95			21 58	
	Moon I. U.	4·0	8 45 20·93	134·01	67·40	15 33 49·3	−706·5
	Moon I. L.	- -	9 11 57·54	132·15	66·95	13 6 11·5	768·2
	κ Cancri - *	5	9 0 14·70			11 14	
	83 Cancri - -	6	9 11 14·84			N.18 18	
13	κ Cancri - *	5	9 0 14·70			N.11 14	
	83 Cancri - -	6	9 11 14·83			18 18	
	Moon I. U.	5·1	9 38 13·99	130·68	66·59	10 27 13·0	−819·9
	Moon I. L.	- -	10 4 15·74	129·71	66·37	7 38 54·7	861·4
	ϖ Leonis - *	5	9 52 53·82			8 43	
	α Leonis - *	1½	10 0 59·92			N.12 39	
14	ϖ Leonis - *	5	9 52 53·81			N. 8 43	
	α Leonis - *	1½	10 0 59·91			12 39	
	Moon I. U.	6·1	10 30 9·57	129·37	66·30	4 43 20·6	−892·5
	Moon I. L.	- -	10 56 3·34	129·71	66·41	N. 1 42 38·7	912·7
	φ Leonis - -	4½	11 9 37·90			S. 2 54	
	σ Leonis - *	4	11 14 0·77			N. 6 47	
15	φ Leonis - -	4½	11 9 37·90			S. 2 54	
	σ Leonis - *	4	11 14 0·76			N. 6 47	
	Moon I. U.	7·1	11 22 5·63	130·80	66·70	S. 1 20 57·2	−921·4
	Moon I. L.	- -	11 48 25·44	132·64	67·19	4 25 6·0	918·0
	υ Leonis - -	4½	11 29 52·27			0 3	
	B.A.C. 4006	6	11 43 58·59			S. 4 34	
16	υ Leonis - -	4½	11 29 52·26			S. 0 3	
	B.A.C. 4006	6	11 43 58·58			4 34	
	Moon I. U.	8·2	12 15 12·00	135·25	67·86	7 27 16·7	−901·5
	Moon I. L.	- -	12 42 34·27	138·58	68·72	10 24 46·7	871·0
	28 Virginis -	6	12 34 49·39			6 44	
	ψ Virginis -	5	12 47 10·48			S. 8 47	
17	28 Virginis -	6	12 34 49·38			S. 6 44	
	ψ Virginis -	5	12 47 10·48			8 47	
	Moon I. U.	9·2	13 10 40·48	142·55	69·71	13 14 41·3	−825·4
	Moon I. L.	- -	13 39 37·44	147·01	70·80	15 53 53·1	763·8
	85 Virginis -	6	13 38 9·53			15 4	
	89 Virginis -	5	13 42 22·73			S.17 26	
18	85 Virginis -	6	13 38 9·52			S.15 4	
	89 Virginis -	5	13 42 22·72			17 26	
	Moon I. U.	10·2	14 9 29·68	151·73	71·95	18 19 5·3	−685·4
	Moon I. L.	- -	14 40 18·59	156·39	73·05	20 26 56·6	590·4
	α² Libræ - -	2½	14 43 15·15			15 28	
	20 Libræ - -	3½	14 56 0·39			S.24 44	
19	α² Libræ - -	2½	14 43 15·14			S.15 28	
	20 Libræ - -	3½	14 56 0·38			24 44	
	Moon I. U.	11·3	15 12 1·33	160·63	74·04	S.22 14 12·4	−479·7

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			h m s	s	s	° ′ ″	″
une 19	Moon I. L.	- -	15 44 30·27	164·02	74·81	S. 23 37 56·4	−355·6
	39 Libræ - -	4½	15 28 39·77			27 40	
	ρ Scorpii - -	4½	15 48 22·74			S. 28 48	
20	39 Libræ - -	4½	15 28 39·78			S. 27 40	
	ρ Libræ - -	4½	15 48 22·74			28 48	
	Moon I. U.	12·3	16 17 32·83	166·17	75·29	24 35 46·5	−221·4
	Moon I. L.	- -	16 50 52·34	166·80	75·41	25 6 9·6	− 81·9
	τ Scorpii - -	3½	16 27 18·48			27 55	
	A Ophiuchi -	5	17 6 52·68			S. 26 24	
21	τ Scorpii - -	3½	16 27 18·48			S. 27 55	
	A Ophiuchi -	5	17 6 52·68			26 24	
	Moon I. U.	13·3	17 24 9·33	165·75	75·14	25 8 32·5	+ 57·7
	Moon I. L.	- -	17 57 3·99	163·10	74·51	24 43 26·1	192·1
	γ² Sagittarii	4	17 56 13·17			29 35	
	μ¹ Sagittarii	4	18 5 31·31			S. 21 5	
22	γ² Sagittarii	4	17 56 13·18			S. 29 35	
	μ¹ Sagittarii	4	18 5 31·32			21 5	
	Moon II. U.	14·4	18 31 45·47	158·91	73·54	23 52 21·4	+316·7
	σ Sagittarii	2½	18 46 43·31			26 28	
	π Sagittarii	3	19 1 33·98			S. 21 14	
23	σ Sagittarii	2½	18 46 43·33			S. 26 28	
	π Sagittarii	3	19 1 34·00			21 14	
	Moon II. L.	- -	19 3 2·92	153·86	72·33	22 37 36·7	+428·2
	Moon II. U.	15·4	19 33 15·87	148·24	70·96	21 2 3·4	524·6
	β Capricorni	3	20 13 15·84			15 13	
	ρ Capricorni	5	20 20 59·55			S. 18 16	
24	β Capricorni	3	20 13 15·86			S. 15 13	
	ρ Capricorni	5	20 20 59·57			18 16	
	Moon II. L.	- -	20 2 19·76	142·41	69·53	19 8 48·6	+605·1
	Moon II. U.	16·5	20 30 14·23	136·72	68·09	17 1 2·2	670·1
	θ Capricorni	4	20 58 11·64			17 47	
	ν Aquarii -	4½	21 2 4·77			S. 11 56	
25	θ Capricorni	4	20 58 11·67			S. 17 47	
	ν Aquarii -	4½	21 2 4·80			11 56	
	Moon II. L.	- -	20 57 2·43	131·40	66·74	14 41 45·0	+720·5
	Moon II. U.	17·5	21 22 49·91	126·62	65·50	12 13 42·9	757·8
	ξ Aquarii -	4½	21 30 24·53			8 29	
	ι Aquarii -	4	21 58 59·00			S. 14 33	
26	ξ Aquarii -	4½	21 30 24·56			S. 8 29	
	ι Aquarii -	4	21 58 59·03			14 33	
	Moon II. L.	- -	21 47 43·81	122·48	64·41	9 39 25·0	+783·4
	Moon II. U.	18·5	22 11 52·28	119·05	63·50	7 1 0·7	+799·0
	ζ Aquarii -	3½	22 21 43·54			0 44	
	η Aquarii -	3½	22 28 15·89			S. 0 50	
27	ζ Aquarii -	3½	22 21 43·57			S. 0 44	
	η Aquarii -	3½	22 28 15·92			S. 0 50	

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			h m s	s	s	° ′ ″	″
June 27	Moon II. L.	- -	22 35 23·88	116·34	62·78	S. 4 20 23·6	+805·8
	Moon II. U.	19·6	22 58 27·32	114·35	62·24	S. 1 39 12·0	804·9
	16 Piscium -	6	23 29 20·69			N. 1 20	
	λ Piscium -	5	23 35 0·08			N. 1 1	
28	16 Piscium -	6	23 29 20·72			N. 1 20	
	λ Piscium -	5	23 35 0·11			1 1	
	Moon II. L.	- -	23 21 11·24	113·08	61·90	1 1 7·4	+797·2
	Moon II. U.	20·6	23 43 44·08	112·50	61·75	3 39 16·5	783·3
	ω Piscium *	4	23 52 13·25			6 6	
	d Piscium *	5½	0 13 29·44			N. 7 25	
29	ω Piscium *	4	23 52 13·28			N. 6 6	
	d Piscium *	5½	0 13 29·48			7 25	
	Moon II. L.	- -	0 6 14·04	112·60	61·78	6 14 3·7	+763·6
	Moon II. U.	21·6	0 28 48·98	113·33	61·98	8 44 19·9	738·2
	58 Piscium *	5	0 39 49·03			11 13	
	ε Piscium *	4	0 55 46·35			N. 7 8	
30	58 Piscium *	5	0 39 49·06			N. 11 13	
	ε Piscium *	4	0 55 46·38			7 8	
	Moon II. L.	- -	0 51 36·41	114·67	62·35	11 8 56·8	+707·0
	Moon II. U.	22·7	1 14 43·38	116·58	62·87	13 26 44·0	669·9
	η Piscium -	3½	1 24 5·27			14 38	
	β Arietis - -	2½	1 47 0·27			N. 20 8	
July 1	η Piscium -	3½	1 24 5·30			N. 14 38	
	β Arietis - -	2½	1 47 0·30			20 8	
	Moon II. L.	- -	1 38 16·39	119·00	63·52	15 36 27·9	+626·4
	Moon II. U.	23·7	2 2 21·13	121·86	64·28	17 36 49·7	576·1
	μ Arietis - -	5½	2 34 34·14			19 25	
	π Arietis - -	5½	2 41 34·48			N. 16 53	
2	μ Arietis - -	5½	2 34 34·17			N. 19 25	
	π Arietis - -	5½	2 41 34·51			16 53	
	Moon II. L.	- -	2 27 2·43	125·07	65·12	19 26 24·6	+518·5
	Moon II. U.	24·7	2 52 23·73	128·51	66·01	21 3 42·6	453·2
	δ Arietis - -	4½	3 3 43·16			19 12	
	17 Tauri - -	4	3 36 39·67			N. 23 40	
3	δ Arietis - -	4½	3 3 43·19			N. 19 12	
	17 Tauri - -	4	3 36 39·70			23 40	
	Moon II. L.	- -	3 18 26·91	132·03	66·90	22 27 9·6	+379·9
	Moon II. U.	25·8	3 45 11·96	135·45	67·76	23 35 8·8	298·6
	A¹ Tauri - -	4½	3 56 30·81			21 42	
	ε Tauri - -	3½	4 20 31·98			N. 18 52	
4	Moon II. L.	- -	4 12 36·67	138·60	68·54	N. 24 26 6·8	+209·8
	Moon II. U.	26·8	4 40 36·48	141·28	69·19	24 58 36·4	114·1
5	Moon II. L.	- -	5 9 4·78	143·32	69·68	N. 25 11 22·5	+ 12·9
	Moon II. U.	27·8	5 37 53·05	144·59	69·98	25 3 30·6	— 92·0
6	Moon II. L.	- -	6 6 51·76	145·05	70·08	N. 24 34 29·0	—198·4
	Moon II. U.	28 9	6 35 51·01	144·70	69·98	N. 23 44 13·7	—303·8

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			h m s	s	s	° ′ ″	″
July 7	Moon II. L.	- -	7 4 41·62	143·63	69·71	N.22 33 10·1	−406·0
8	Moon I. U.	0·4	7 30 57·20	142·07	69·30	N.21 2 11·6	−502·7
	Moon I. L.	- -	7 59 10·32	140·07	68·81	19 12 35·9	591·9
9	Moon I. U.	1·4	8 26 58·12	137·89	68·26	N.17 6 2·5	−672·1
	Moon I. L.	- -	8 54 19·69	135·73	67·73	14 44 26·1	742·2
10	Moon I. U.	2·5	9 21 16·37	133·77	67·25	N.12 9 53·5	−801·4
	Moon I. L.	- -	9 47 51·59	132·18	66·87	9 24 38·6	849·2
11	ο Leonis - *	3½	9 33 45·73			N.10 31	
	α Leonis - *	1½	10 0 59·76			12 39	
	Moon I. U.	3·5	10 14 10·43	131·06	66·61	6 30 59·7	−885·3
	Moon I. L.	- -	10 40 19·29	130·53	66·50	3 31 18·9	909·5
	d Leonis - *	5	10 53 24·80			4 22	
	χ Leonis - *	5	10 57 52·70			N. 8 5	
12	d Leonis - *	5	10 53 24·79			N. 4 22	
	χ Leonis - *	5	10 57 52·70			8 5	
	Moon I. U.	4·6	11 6 25·64	130·65	66·57	N. 0 28 0·6	−921·6
	Moon I. L.	- -	11 32 37·56	131·46	66·82	S. 2 36 29·2	921·3
	υ Leonis - -	4½	11 29 52·04			S. 0 3	
	β Virginis -	3½	11 43 29·52			N. 2 33	
13	υ Leonis - -	4½	11 29 52·03			S. 0 3	
	β Virginis -	3½	11 43 29·51			N. 2 33	
	Moon I. U.	5·6	11 59 3·54	132·99	67·24	S. 5 39 40·6	−908·4
	Moon I. L.	- -	12 25 52·11	135·22	67·84	8 38 59·7	882·5
	χ Virginis -	5	12 32 7·21			7 13	
	ψ Virginis -	5	12 47 10·22			S. 8 47	
14	χ Virginis -	5	12 32 7·21			S. 7 13	
	ψ Virginis -	5	12 47 10·21			8 47	
	Moon I. U.	6·6	12 53 11·45	138·11	68·60	11 31 47·5	−843·1
	Moon I. L.	- -	13 21 8·96	141·56	69·49	14 15 19·2	789·8
	α Virginis -	1	13 17 55·13			10·26	
	h Virginis -	5	13 25 41·83			S. 9 27	
15	α Virginis -	1	13 17 55·11			S. 10 26	
	h Virginis -	5	13 25 41·82			9 27	
	Moon I. U.	7·7	13 49 50·57	145·43	70·46	16 46 44·8	−722·1
	Moon I. L.	- -	14 19 20·14	149·51	71·47	19 3 11·1	639·9
	λ Virginis -	4½	14 11 38·75			12 44	
	56 Hydræ - -	5	14 39 41·90			S. 25 30	
16	λ Virginis -	4½	14 11 38·74			S. 12 44	
	56 Hydræ - -	5	14 39 41·89			25 30	
	Moon I. U.	8·7	14 49 38·62	153·53	72·44	21 1 46·1	−543·6
	Moon I. L.	- -	15 20 43·37	157·17	73·30	22 39 47·2	−434·5
	ι¹ Libræ - -	4½	15 4 21·96			19 16	
	ζ¹ Libræ - -	4	15 20 29·03			S. 16 14	
17	ι¹ Libræ - -	4½	15 4 21·95			S. 19 16	
	ζ¹ Libræ - -	4	15 20 29·02			S. 16 14	

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			h m s	s	s	° ′ ″	″
July 17	Moon I. U.	9·7	15 52 27·65	160·06	73·96	S. 23 54 50·1	−314·3
	Moon I. L.	- -	16 24 40·63	161·90	74·37	24 45 0·0	186·2
	σ Scorpii - -	3½	16 12 48·88			25 15	
	α Scorpii - -	1½	16 20 57·59			S. 26 7	
18	σ Scorpii - -	3½	16 12 48·88			S. 25 15	
	α Scorpii - -	1½	16 20 57·58			26 7	
	Moon I. U.	10·8	16 57 8·07	162·44	74·45	25 9 2·8	− 53·9
	Moon I. L.	- -	17 29 33·55	161·56	74·20	25 6 33·9	+ 78·3
	θ Ophiuchi -	3½	17 13 32·96			24 51	
	d Ophiuchi -	4	17 18 33·50			S. 29 44	
19	θ Ophiuchi -	3½	17 13 32·96			S. 24 51	
	d Ophiuchi -	4	17 18 33·50			29 44	
	Moon I. U.	11·8	18 1 40·19	159·32	73·62	24 38 0·4	+206·1
	Moon I. L.	- -	18 33 12·49	155·89	72·77	23 44 39·7	325·6
	φ Sagittarii	3½	18 37 3·15			27 8	
	σ Sagittarii	2½	18 46 43·62			S. 26 28	
20	φ Sagittarii	3½	18 37 3·15			S. 27 8	
	σ Sagittarii	2½	18 46 43·63			26 28	
	Moon I. U.	12·9	19 3 57·89	151·55	71·68	22 28 31·4	+433·6
	Moon I. L.	- -	19 33 47·53	146·65	70·45	20 52 5·3	528·3
	υ Sagittarii	4½	19 13 50·43			16 13	
	h^3 Sagittarii	4½	19 28 19·37			S. 25 11	
21	υ Sagittarii	4½	19 13 50·43			S. 16 13	
	h^3 Sagittarii	4½	19 28 19·38			25 11	
	Moon I. U.	13·9	20 2 36·57	141·51	69·15	18 58 9·5	+608·5
	α^2 Capricorni	3½	20 10 24·71			12 58	
	ρ Capricorni	5	20 21 0·08			S. 18 16	
22	α^2 Capricorni	3½	20 10 24·72			S. 12 58	
	ρ Capricorni	5	20 21 0·09			18 16	
	Moon II. L.	- -	20 32 39·63	136·20	67·85	16 49 38·1	+674·3
	Moon II. U.	14·9	20 59 24·77	131·39	66·61	14 29 22·7	726·0
	ι Capricorni	4½	21 14 34·53			17 25	
	γ Capricorni	3½	21 32 27·47			S. 17 17	
23	ι Capricorni	4½	21 14 34·54			S. 17 25	
	γ Capricorni	3½	21 32 27·49			17 17	
	Moon II. L.	- -	21 25 14·66	127·02	65·47	12 0 5·7	+764·7
	Moon II. U.	16·0	21 50 15·35	123·20	64·46	9 24 16·5	791·6
	θ Aquarii -	4½	22 9 33·81			8 28	
	χ Aquarii -	3½	22 14 32·51			S. 2 5	
24	θ Aquarii -	4½	22 9 33·83			S. 8 28	
	γ Aquarii -	3½	22 14 32·54			2 5	
	Moon II. L.	- -	22 14 33·84	119·99	63·61	6 44 9·8	+807·8
	Moon II. U.	17·0	22 38 17·73	117·43	62·94	S. 4 1 46·1	+814·6
	β Piscium -	4½	22 56 52·06			N. 3 4	
	γ Piscium -	4	23 10 1·30			N. 2 31	
25	β Piscium -	4½	22 56 52·09			N. 3 4	

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			h m s	s	s	° ′ ″	″
July 25	γ Piscium -	4	23 10 1·32			N. 2 31	
	Moon II. L.	- -	23 1 34·88	115·53	62·44	S. 1 18 51·9	+813·1
	Moon II. U.	18·0	23 24 33·18	114·29	62·11	N. 1 22 57·5	804·0
	ι Piscium *	4½	23 32 51·74			N. 4 52	
	29 Piscium -	5½	23 54 45·56			S. 3 48	
26	ι Piscium *	4½	23 32 51·77			N. 4 52	
	29 Piscium -	5½	23 54 45·59			S. 3 48	
	Moon II. L.	- -	23 47 20·46	113·69	61·98	N. 4 2 16·7	+788·1
	Moon II. U.	19·1	0 10 4·32	113·72	62·01	6 37 46·5	765·9
	B.A.C. 149 *	6	0 28 47·16			12 27	
	δ Piscium *	4½	0 41 31·71			N. 6 50	
27	B.A.C. 149 *	6	0 28 47·19			N.12 27	
	δ Piscium *	4½	0 41 31·74			6 50	
	Moon II. L.	- -	0 32 52·15	114·35	62·20	9 8 13·7	+737·7
	Moon II. U.	20·1	0 55 51·01	115·55	62·56	11 32 26·6	703·5
	B.A.C. 341 -	6	1 2 53·22			14 56	
	η Piscium -	3½	1 24 6·14			N.14 38	
28	B.A.C. 341 -	6	1 2 53·25			N.14 56	
	η Piscium -	3½	1 24 6·17			14 38	
	Moon II. L.	- -	1 19 7·54	117·29	63·05	13 49 13·8	+663·4
	Moon II. U.	21·1	1 42 47·87	119·51	63·68	15 57 22·6	617·1
	α Arietis - -	2	1 59 23·80			22 48	
	η Arietis - -	5½	2 5 4·60			N.20 33	
29	α Arietis - -	2	1 59 23·84			N.22 48	
	η Arietis - -	5½	2 5 4·64			20 33	
	Moon II. L.	- -	2 6 57·45	122·15	64·40	17 55 37·5	+564·3
	Moon II. U.	22·2	2 31 40·84	125·13	65·21	19 42 39·1	504·8
	41 Arietis - -	4	2 41 51·68			26 41	
	ε Arietis - -	4½	2 51 19·17			N.20 47	
30	41 Arietis - -	4	2 41 51·71			N.26 41	
	ε Arietis - -	4½	2 51 19·20			20 47	
	Moon II. L.	- -	2 57 1·49	128·34	66·06	21 17 3·6	+438·1
	Moon II. U.	23·2	3 23 1·41	131·65	66·92	22 37 24·3	364·1
	η Tauri - -	3	3 39 16·40			23 40	
	A' Tauri - -	4½	3 56 31·64			N.21 42	
31	η Tauri - -	3	3 39 16·43			N.23 40	
	A' Tauri - -	4½	3 56 31·67			21 42	
	Moon II. L.	- -	3 49 40·85	134·90	67·75	23 42 12·9	+282·8
	Moon II. U.	24·2	4 16 58·25	137·95	68·51	24 30 2·4	194·3
	τ Tauri - -	4½	4 33 56·96			22 41	
	ι Tauri - -	5	4 54 49·91			N.21 23	
Aug. 1	τ Tauri - -	4½	4 33 56·99			N.22 41	
	ι Tauri - -	5	4 54 49·95			21 23	
	Moon II. L.	- -	4 44 49·96	140·60	69·17	24 59 31·4	+ 99·5
	Moon II. U.	25·3	5 13 10·36	142·70	69·67	25 9 28·5	− 0·8
	χ¹ Orionis -	4½	5 46 11·39			20 15	
	χ² Orionis -	5	5 55 42·25			N.20 8	

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			h m s	s	s	° ′ ″	″
Aug. 2	Moon II. L.	- -	5 41 52·23	144·15	70·01	N.24 58 58·1	—104·8
	Moon II. U.	26·3	6 10 47·19	144·88	70·16	24 27 25·2	210·8
3	Moon II. L.	- -	6 39 46·49	144·88	70·13	N.23 34 38·7	—316·7
	Moon II. U.	27·3	7 8 41·77	144·23	69·94	22 20 54·6	420·0
4	Moon II. L.	- -	7 37 25·84	143·04	69·61	N.20 46 56·9	—518·6
	Moon II. U.	28·4	8 5 53·14	141·47	69·20	18 53 54·8	610·4
5	Moon II. L.	- -	8 34 0·33	139·71	68·74	N.16 43 22·1	—693·5
	Moon II. U.	29·4	9 1 46·18	137·95	68·28	14 17 12·6	766·3
6	Moon I. L.	- -	9 26 55·94	136·41	67·87	N.11 37 36·9	—827·8
7	Moon I. U.	1·0	9 54 4·61	135·10	67·54	N. 8 46 58·0	—876·7
	Moon I. L.	- -	10 21 0·07	134·23	67·34	5 47 49·5	912·5
8	Moon I. U.	2·0	10 47 48·09	133·87	67·27	N. 2 42 51·2	—934·8
	Moon I. L.	- -	11 14 35·32	134·10	67·36	S. 0 25 10·8	943·1
9	Moon I. U.	3·0	11 41 29·07	134·96	67·61	S. 3 33 27·6	—937·3
	Moon I. L.	- -	12 8 36·88	136·45	68·03	6 39 8·0	917·0
10	13 Virginis -	6	12 11 34·89			S. 0 1	
	q Virginis -	6	12 26 38·61			8 41	
	Moon I. U.	4·0	12 36 6·19	138·54	68·60	9 39 18·4	—882·3
	Moon I. L.	- -	13 4 3·84	141·16	69·30	12 31 5·5	833·1
	61 Virginis -	5	13 11 10·72			17 32	
	α Virginis -	1	13 17 54·83			S. 10 26	
11	61 Virginis -	5	13 11 10·71			S. 17 32	
	α Virginis -	1	13 17 54·82			10 26	
	Moon I. U.	5·1	13 32 35·62	144·20	70·10	15 11 36·2	—769·6
	Moon I. L.	- -	14 1 45·67	147·50	70·95	17 38 0·3	692·1
	89 Virginis -	5	13 42 22·15			17 26	
	λ Virginis -	4½	14 11 38·42			S. 12 44	
12	89 Virginis -	5	13 42 22·13			S. 17 26	
	λ Virginis -	4½	14 11 38·41			12 44	
	Moon I. U.	6·1	14 31 35·87	150·85	71·79	19 47 33·8	—601·3
	Moon I. L.	- -	15 2 5·20	153·98	72·56	21 37 43·4	498·4
	20 Libræ - -	3½	14 55 59·85			24 44	
	ι[2] Libræ - -	4½	15 4 21·62			S. 19 16	
13	20 Libræ - -	3½	14 55 59·83			S. 24 44	
	ι[2] Libræ - -	4½	15 4 21·61			19 16	
	Moon I. U.	7·1	15 33 9·34	156·60	73·20	23 6 13·5	—385·1
	Moon I. L.	- -	16 4 40·60	158·45	73·63	24 11 13·7	263·9
	σ Scorpii - -	3½	16 12 48·59			25 15	
	α Scorpii - -	1½	16 20 57·30			S. 26 7	
14	*σ* Scorpii - -	3½	16 12 48·57			S. 25 15	
	α Scorpii - -	1½	16 20 57·28			26 7	
	Moon I. U.	8·2	16 36 28·14	159·28	73·81	24 51 26·7	—137·8
	Moon I. L.	- -	17 8 18·84	158·96	73·70	25 6 14·2	— 10·2
	A Ophiuchi -	5	17 6 52·52			S. 26 24	

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			h m s	s	s	° ′ ″	″
Aug. 14	θ Ophiuchi-	3½	17 13 32·74			S. 24 51	
15	A Ophiuchi-	5	17 6 52·50			S. 26 24	
	θ Ophiuchi-	3½	17 13 32·73			24 51	
	Moon I. U.	9·2	17 39 58·55	157·45	73·30	24 55 41·1	+115·1
	Moon I. L.	- -	18 11 13·47	154·86	72·63	24 20 34·6	234·7
	δ Sagittarii	3½	18 12 10·46			29 53	
	λ Sagittarii	3	18 19 28·18			S. 25 30	
16	δ Sagittarii	3½	18 12 10·45			S. 29 53	
	λ Sagittarii	3	18 19 28·17			25 30	
	Moon I. U.	10·2	18 41 51·58	151·36	71·73	23 22 21·1	+345·9
	Moon I. L.	- -	19 11 43·55	147·22	70·67	22 2 56·4	446·2
	ρ^2 Sagittarii	4	19 13 40·99			18 6	
	h^3 Sagittarii	4½	19 28 19·42			S. 25 11	
17	ρ^2 Sagittarii	4	19 13 40·98			S. 18 6	
	h^3 Sagittarii	4½	19 28 19·42			25 11	
	Moon I. U.	11·3	19 40 43·35	142·71	69·50	20 24 39·4	+534·5
	Moon I. L.	- -	20 8 48·04	138·08	68·29	18 30 0·0	609·9
	α^2 Capricorni	3½	20 10 24·84			12 58	
	ρ Capricorni	5	20 21 0·25			S. 18 16	
18	α^2 Capricorni	3½	20 10 24·84			S. 12 58	
	ρ Capricorni	5	20 21 0·25			18 16	
	Moon I. U.	12·3	20 35 57·73	133·57	67·11	16 21 33·6	+672·4
	Moon I. L.	- -	21 2 14·88	129·35	65·98	14 1 53·4	722·3
	θ Capricorni	4	20 58 12·50			17 47	
	ι Capricorni	4½	21 14 34·82			S. 17 25	
19	θ Capricorni	4	20 58 12·50			S. 17 47	
	ι Capricorni	4½	21 14 34·82			17 25	
	Moon I. U.	13·4	21 27 43·75	125·54	64·96	11 33 25·9	+760·4
	Moon I. L.	- -	21 52 29·87	122·24	64·07	8 58 29·0	787·3
	ι Aquarii -	4	21 59 0·09			14 32	
	θ Aquarii -	4½	22 9 34·21			S. 8 28	
20	ι Aquarii -	4	21 59 0·10			S. 14 32	
	θ Aquarii -	4½	22 9 34·22			8 28	
	Moon II. U.	14·4	22 18 46·26	119·37	63·33	6 19 10·6	+804·1
	η Aquarii -	3½	22 28 17·05			0 50	
	λ Aquarii -	4	22 45 25·95			S. 8 19	
21	η Aquarii -	3½	22 28 17·06			S. 0 50	
	λ Aquarii -	4	22 45 25·96			8 19	
	Moon II. L.	- -	22 42 25·21	117·22	62·74	3 37 27·7	+811·5
	Moon II. U.	15·4	23 5 41·93	115·66	62·32	S. 0 55 7·8	810·4
	κ Piscium -	4½	23 19 52·65			N. 0 30	
	ι Piscium *	4½	23 32 52·31			N. 4 52	
22	κ Piscium -	4½	23 19 52·66			N. 0 30	
	ι Piscium *	4½	23 32 52·32			4 52	
	Moon II. L.	- -	23 28 43·48	114·69	62·07	1 46 10·5	+801·4
	Moon II. U.	16·5	23 51 36·79	114·29	61·98	N. 4 24 56·4	+785·1

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			h m s	s	s	° ′ ″	″
Aug. 22	*d* Piscium *	5½	0 13 30·93			N. 7 25	
	45 Piscium *	6	0 18 36·07			6 55	
23	*d* Piscium *	5½	0 13 30·95			N. 7 25	
	45 Piscium *	6	0 18 36·08			6 55	
	Moon II. L. - -		0 14 28·65	114·45	62·04	6 59 44·9	+761·9
	Moon II. U.	17·5	0 37 25·61	115·13	62·26	9 29 15·8	732·2
	ε Piscium *	4	0 55 47·92			7 8	
	ζ Piscium *	4½	1 6 32·24			N. 6 50	
24	ε Piscium *	4	0 55 47·94			N. 7 8	
	ζ Piscium *	4½	1 6 32·26			6 50	
	Moon II. L. - -		1 0 33·87	116·33	62·62	11 52 12·0	+696·1
	Moon II. U.	18·5	1 23 59·20	117·97	63·11	14 7 18·1	653·8
	β Arietis - -	2½	1 47 2·00			20 8	
	α Arietis - -	2	1 59 24·64			N. 22 48	
25	β Arietis - -	2½	1 47 2·02			N. 20 8	
	α Arietis - -	2	1 59 24·66			22 48	
	Moon II. L. - -		1 47 46·85	120·03	63·70	16 13 18·5	+605·2
	Moon II. U.	19·6	2 12 1·42	122·45	64·38	18 8 57·4	550·2
	41 Arietis - -	4	2 41 52·57			26 41	
	ε Arietis - -	4½	2 51 20·03			N. 20 47	
26	41 Arietis - -	4	2 41 52·61			N. 26 41	
	ε Arietis - -	4½	2 51 20·06			20 47	
	Moon II. L. - -		2 36 46·64	125·13	65·15	19 52 57·8	+488·7
	Moon II. U.	20·6	3 2 5·16	127·98	65·92	21 24 0·6	420·6
	17 Tauri - -	4	3 36 41·46			23 40	
	27 Tauri - -	4	3 40 57·85			N. 23 38	
27	17 Tauri - -	4	3 36 41·49			N. 23 40	
	27 Tauri - -	4	3 40 57·88			23 38	
	Moon II. L. - -		3 27 58·37	130·89	66·71	22 40 47·1	+346·0
	Moon II. U.	21·6	3 54 26·23	133·73	67·46	23 41 59·1	264·9
	ε Tauri - -	3½	4 20 33·65			18 52	
	α Tauri - -	1	4 28 0·23			N. 16 14	
28	ε Tauri - -	3½	4 20 33·68			N. 18 52	
	α Tauri - -	1	4 28 0·26			16 14	
	Moon II. L. - -		4 21 27·13	136·37	68·15	24 26 21·0	+177·7
	Moon II. U.	22·7	4 48 57·77	138·67	68·74	24 52 43·4	+ 85·1
	β Tauri - -	2	5 17 33·85			28 29	
	ζ Tauri - -	3½	5 29 23·60			N. 21 3	
29	β Tauri - -	2	5 17 33·88			N. 28 29	
	ζ Tauri - -	3½	5 29 23·64			21 3	
	Moon II. L. - -		5 16 53·45	140·52	69·20	25 0 6·2	— 12·0
	Moon II. U.	23·7	5 45 8·20	141·84	69·53	24 47 41·6	—112·5
	μ Geminor.	3	6 14 36·09			22 35	
	ν Geminor.	4½	6 20 45·53			N. 20 18	
30	μ Geminor.	3	6 14 36·12			N. 22 35	
	ν Geminor.	4½	6 20 45·56			N. 20 18	

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			h m s	s	s	° ′ ″	″
Aug. 30	Moon II. L.	- -	6 13 35·34	142·58	69·69	N. 24 14 58·8	−214·8
	Moon II. U.	24·7	6 42 7·96	142·76	69·71	23 21 46·0	317·2
	δ Geminor.	3½	7 11 51·92			22 14	
	υ Geminor.	4½	7 27 24·07			N. 27 12	
31	δ Geminor.	3½	7 11 51·94			N. 22 14	
	υ Geminor.	4½	7 27 24·10			27 12	
	Moon II. L.	- -	7 10 39·59	142·43	69·60	22 8 13·0	−417·9
	Moon II. U.	25·8	7 39 4·75	141·70	69·38	20 34 51·2	515·0
	d^1 Cancri - -	6	8 15 26·51			18 47	
	η Cancri - -	6	8 24 42·35			N. 20 55	
Sept. 1	Moon II. L.	- -	8 7 19·31	140·70	69·08	N. 18 42 35·6	−606·6
	Moon II. U.	26·8	8 35 20·94	139·57	68·77	16 32 41·5	691·0
2	Moon II. L.	- -	9 3 9·10	138·48	68·45	N. 14 6 46·2	−766·6
	Moon II. U.	27·8	9 30 45·06	137·56	68·19	11 26 45·5	831·7
3	Moon II. L.	- -	9 58 11·76	136·95	68·02	N. 8 34 53·3	−884·9
	Moon II. U.	28·9	10 25 33·51	136·75	67·95	5 33 40·0	925·0
4	Moon II. L.	- -	10 52 55·79	137·05	68·02	N. 2 25 49·7	−950·9
5	Moon I. U.	0·6	11 18 8·37	137·84	68·23	S. 0 45 40·2	−961·5
	Moon I. L.	- -	11 45 50·17	139·22	68·60	3 57 41·4	956·0
6	Moon I. U.	1·6	12 13 51·90	141·16	69·12	S. 7 6 58·3	−934·0
	Moon I. L.	- -	12 42 19·94	143·60	69·76	10 10 9·9	895·1
7	Moon I. U.	2·6	13 11 19·73	146·43	70·51	S. 13 3 53·5	−839·4
	Moon I. L.	- -	13 40 55·31	149·53	71·30	15 44 50·2	767·4
8	85 Virginis -	6	13 38 8·66			S. 15 4	
	89 Virginis -	5	13 42 21·85			17 26	
	Moon I. U.	3·6	14 11 8·43	152·65	72·11	18 9 49·4	−680·0
	Moon I. L.	- -	14 41 58·23	155·59	72·85	20 15 54·8	578·7
	α^2 Libræ - -	2½	14 43 14·26			15 28	
	ι^1 Libræ - -	4½	15 4 21·23			S. 19 16	
9	α^2 Libræ - -	2½	14 43 14·25			S. 15 28	
	ι^1 Libræ - -	4½	15 4 21·22			19 16	
	Moon I. U.	4·7	15 13 20·63	158·04	73·47	22 0 33·1	−465·9
	Moon I. L.	- -	15 45 8·21	159·74	73·90	23 21 41·1	344·2
	δ Scorpii - -	2½	15 52 10·40			22 13	
	β^1 Scorpii - -	2	15 57 24·71			S. 19 25	
10	δ Scorpii - -	2½	15 52 10·39			S. 22 13	
	β^1 Scorpii - -	2	15 57 24·70			19 25	
	Moon I. U.	5·7	16 17 10·56	160·46	74·08	24 17 51·6	−217·0
	Moon I. L.	- -	16 49 14·92	160·06	73·98	24 48 21·0	− 88·0
	τ Scorpii - -	3½	16 27 17·70			27 55	
	25 Scorpii - -	6	16 38 24·68			S. 25 16	
11	τ Scorpii - -	3½	16 27 17·68			S. 27 55	
	25 Scorpii - -	6	16 38 24·66			25 16	
	Moon I. U.	6·7	17 21 7·49	158·50	73·60	S. 24 53 9·8	+ 39·2

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			h m s	s	s	° ′ ″	″
Sept. 11	Moon I. L.	- -	17 52 34·77	155·87	72·95	S. 24 33 1·6	+161·0
	γ^2 Sagittarii	3½	17 56 57·29			30 25	
	μ^1 Sagittarii	4	18 5 31·01			S. 21 5	
12	γ^2 Sagittarii	3½	17 56 57·28			S. 30 25	
	μ^1 Sagittarii	4	18 5 30·99			21 5	
	Moon I. U.	7·8	18 23 24·90	152·35	72·07	23 49 17·8	+274·7
	Moon I. L.	- -	18 53 28·63	148·19	71·01	22 43 49·0	378·2
	φ Sagittarii	3½	18 37 2·71			27 8	
	σ Sagittarii	2½	18 46 43·24			S. 26 28	
13	φ Sagittarii	3½	18 37 2·70			S. 27 8	
	σ Sagittarii	2½	18 46 43·22			26 28	
	Moon I. U.	8·8	19 22 39·85	143·65	69·85	21 18 46·1	+470·2
	Moon I. L.	- -	19 50 55·61	138·98	68·63	19 36 32·0	550·1
	ϵ^2 Sagittarii	5	19 34 38·26			16 27	
	g Sagittarii	5½	19 50 8·30			S. 15 51	
14	ϵ^2 Sagittarii	5	19 34 38·25			S. 16 27	
	g Sagittarii	5½	19 50 8·29			15 51	
	Moon I. U.	9·8	20 18 15·84	134·43	67·42	17 39 32·8	+617·8
	Moon I. L.	- -	20 44 42·90	130·14	66·26	15 30 11·9	673·7
	ϵ Aquarii -	3½	20 40 13·37			10 0	
	θ Capricorni	4	20 58 12·42			S. 17 47	
15	ϵ Aquarii -	3½	20 40 13·36			S. 10 0	
	θ Capricorni	4	20 58 12·41			17 47	
	Moon I. U.	10·9	21 10 20·84	126·26	65·20	13 10 48·1	+718·4
	Moon I. L.	- -	21 35 15·09	122·87	64·26	10 43 31·7	752·6
	β Aquarii -	3	21 24 18·68			6 11	
	ξ Aquarii -	4½	21 30 25·46			S. 8 28	
16	β Aquarii -	3	21 24 18·68			S. 6 11	
	ξ Aquarii -	4½	21 30 25·45			8 28	
	Moon I. U.	11·9	21 59 31·84	120·02	63·46	8 10 24·7	+777·0
	Moon I. L.	- -	22 23 17·72	117·73	62·81	5 33 21·2	792·2
	θ Aquarii -	4½	22 9 34·29			8 28	
	γ Aquarii -	3½	22 14 33·02			S. 2 5	
17	θ Aquarii -	4½	22 9 34·29			S. 8 28	
	γ Aquarii -	3½	22 14 33·01			2 5	
	Moon I. U.	13·0	22 46 39·52	116·00	62·32	2 54 7·3	+798·8
	Moon I. L.	- -	23 9 44·12	114·85	61·99	S. 0 14 22·5	797·4
	γ Piscium -	4	23 10 2·06			N. 2 31	
	κ Piscium -	4½	23 19 52·90			N. 0 30	
18	γ Piscium -	4	23 10 2·06			N. 2 31	
	κ Piscium -	4½	23 19 52·90			0 30	
	Moon I. U.	14·0	23 32 38·20	114·25	61·83	2 24 18·9	+788·3
	ω Piscium *	4	23 52 14·99			6 6	
	35 Piscium *	6	0 7 53·81			N. 8 3	
19	ω Piscium *	4	23 52 15·00			N. 6 6	
	35 Piscium *	6	0 7 53·82			N. 8 3	

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			h m s	s	s	° ′ ″	″
Sept. 19	Moon II. L.	- -	23 57 31·92	114·19	61·81	N. 5 0 27·2	+771·9
	Moon II. U.	15·0	0 20 24·48	114·65	61·94	7 32 36·9	748·5
	δ Piscium *	4½	0 41 32·86			6 50	
	ε Piscium *	4	0 55 48·39			N. 7 9	
20	δ Piscium *	4½	0 41 32·87			N. 6 50	
	ε Piscium *	4	0 55 48·40			7 9	
	Moon II. L.	- -	0 43 25·43	115·58	62·21	9 59 24·0	+718·2
	Moon II. U.	16·1	1 6 40·15	116·94	62·60	12 19 27·0	681·2
	η Piscium -	3½	1 24 7·47			14 38	
	105 Piscium -	6	1 32 15·70			N. 15 42	
21	η Piscium -	3½	1 24 7·48			N. 14 38	
	105 Piscium -	6	1 32 15·72			15 42	
	Moon II. L.	- -	1 30 13·53	118·68	63·10	14 31 25·3	+637·5
	Moon II. U.	17·1	1 54 9·84	120·75	63·69	16 33 59·2	587·1
	27 Arietis -	6	2 23 16·62			17 5	
	μ Arietis -	5½	2 34 36·60			N. 19 25	
22	27 Arietis - -	6	2 23 16·64			N. 17 5	
	μ Arietis - -	5½	2 34 36·62			19 25	
	Moon II. L.	- -	2 18 32·49	123·06	64·35	18 25 49·0	+530·1
	Moon II. U.	18·1	2 43 23·99	125·54	65·06	20 5 36·8	466·7
	δ Arietis - -	4½	3 3 45·66			19 12	
	ζ Arietis - -	4½	3 6 59·51			N. 20 32	
23	δ Arietis - -	4½	3 3 45·68			N. 19 12	
	ζ Arietis - -	4½	3 6 59·54			20 32	
	Moon II. L.	- -	3 8 45·77	128·09	65·77	21 32 5·2	+397·0
	Moon II. U.	19·1	3 34 37·94	130·59	66·46	22 43 59·9	321·1
	γ Tauri - -	4	4 11 57·42			15 17	
	ε Tauri - -	3½	4 20 34·48			N. 18 52	
24	γ Tauri - -	4	4 11 57·44			N. 15 17	
	ε Tauri - -	3½	4 20 34·50			18 52	
	Moon II. L.	- -	4 0 59·33	132·94	67·11	23 40 10·4	+239·7
	Moon II. U.	20·2	4 27 47·43	135·02	67·69	24 19 33·1	153·3
	k Tauri - -	5½	4 49 43·56			24 50	
	ι Tauri - -	5	4 54 51·65			N. 21 23	
25	k Tauri - -	5½	4 49 43·59			N. 24 50	
	ι Tauri - -	5	4 54 51·68			21 23	
	Moon II. L.	- -	4 54 58·43	136·74	68·16	24 41 12·0	+ 62·6
	Moon II. U.	21·2	5 22 27·57	138·03	68·51	24 44 22·2	− 31·3
	χ¹ Orionis -	4½	5 46 13·06			20 15	
	η Geminor.	3½	6 6 33·15			N. 22 33	
26	χ¹ Orionis - -	4½	5 46 13·09			N. 20 15	
	η Geminor.	3½	6 6 33·18			22 33	
	Moon II. L.	- -	5 50 9·38	138·85	68·73	24 28 32·1	−127·3
	Moon II. U.	22·2	6 17 58·17	139·20	68·83	23 53 24·2	−224·1
	ε Geminor.	3½	6 35 26·71			25 16	
	ζ Geminor.	4	6 55 55·44			N. 20 46	

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			h m s	s	s	° ′ ″	″
Sept. 27	ε Geminor.	3½	6 35 26·73			N. 25 16	
	ζ Geminor.	4	6 55 55·47			20 46	
	Moon II. L.	- -	6 45 48·51	139·12	68·80	22 58 56·9	−320·3
	Moon II. U.	23·3	7 13 35·74	138·70	68·69	21 45 24·7	414·6
	κ Geminor.	3½	7 36 6·60			24 44	
	μ^2 Cancri - -	5	7 59 38·16			N. 21 59	
28	κ Geminor.	3½	7 36 6·63			N. 24 44	
	μ^2 Cancri - -	5	7 59 38·19			21 59	
	Moon II. L.	- -	7 41 16·30	138·03	68·50	20 13 18·7	−505·7
	Moon II. U.	24·3	8 8 48·03	137·25	68·28	18 23 25·3	592·3
	η Cancri - -	6	8 24 43·05			20 55	
	δ Cancri - -	4	8 36 49·94			N. 18 40	
29	η Cancri - -	6	8 24 43·08			N. 20 55	
	δ Cancri - -	4	8 36 49·96			18 40	
	Moon II. L.	- -	8 36 10·40	136·49	68·05	16 16 47·3	−673·0
	Moon II. U.	25·4	9 3 24·45	135·89	67·86	13 54 42·3	746·6
	o Leonis - *	3½	9 33 46·60			10 31	
	ν Leonis - *	5	9 50 47·05			N. 13 6	
30	Moon II. L.	- -	9 30 32·78	135·56	67·75	N. 11 18 44·1	−811·6
	Moon II. U.	26·4	9 57 39·40	135·62	67·72	8 30 42·7	866·8
Oct. 1	Moon II. L.	- -	10 24 49·50	136·15	67·83	N. 5 32 46·0	−910·6
	Moon II. U.	27·4	10 52 9·19	137·23	68·07	N. 2 27 19·3	941·6
2	Moon II. L.	- -	11 19 45·32	138·90	68·47	S. 0 42 53·1	−957·9
	Moon II. U.	28·5	11 47 45·00	141·15	69·02	3 54 46·9	958·2
3	Moon II. L.	- -	12 16 15·24	143·98	69·73	S. 7 5 1·0	−941·1
4	Moon I. U.	0·2	12 43 1·32	147·15	70·55	S. 10 9 59·5	−905·4
	Moon I. L.	- -	13 12 48·73	150·80	71·46	13 5 55·4	850·6
5	Moon I. U.	1·2	13 43 21·16	154·61	72·41	S. 15 48 58·4	−776·7
	Moon I. L.	- -	14 14 38·96	158·31	73·33	18 15 23·2	684·5
6	Moon I. U.	2·3	14 46 38·94	161·58	74·14	S. 20 21 41·8	−576·0
	Moon I. L.	- -	15 19 13·95	164·09	74·77	22 4 54·4	454·1
7	Moon I. U.	3·3	15 52 12·87	165·52	75·13	S. 23 22 43·1	−322·8
	Moon I. L.	- -	16 25 21·24	165·64	75·19	24 13 41·3	186·5
8	σ Scorpii - -	3½	16 12 47·70			S. 25 15	
	α Scorpii - -	1½	16 20 56·40			26 7	
	Moon I. U.	4·3	16 58 22·76	164·37	74·91	24 37 18·4	− 50·1
	Moon I. L.	- -	17 31 0·80	161·75	74·30	24 34 2·2	+ 81·7
	θ Ophiuchi -	3½	17 13 31·83			24 51	
	b Ophiuchi -	5	17 17 56·30			S. 24 3	
9	θ Ophiuchi -	3½	17 13 31·82			S. 24 51	
	b Ophiuchi -	5	17 17 56·28			24 3	
	Moon I. U.	5·4	18 3 0·31	158·00	73·41	24 5 10·4	+205·2
	Moon I. L.	- -	18 34 9·27	153·38	72·29	23 12 40·4	+317·7
	φ Sagittarii	3½	18 37 2·21			S. 27 8	

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			h m s	s	s	° ′ ″	″
Oct. 9	α Sagittarii	2½	18 46 42·74			S. 26 28	
10	φ Sagittarii	3½	18 37 2·20			S. 27 8	
	σ Sagittarii	2½	18 46 42·73			26 28	
	Moon I. U.	6·4	19 4 19·40	148·25	71·03	21 58 56·6	+417·3
	Moon I. L.	- -	19 33 26·43	142·92	69·68	20 26 37·2	503·6
	υ Sagittarii	4½	19 13 49·70			16 13	
	σ^2 Sagittarii	5	19 34 37·83			S. 16 27	
11	υ Sagittarii	4½	19 13 49·68			S. 16 13	
	σ^2 Sagittarii	5	19 34 37·82			16 27	
	Moon I. U.	7·4	20 1 29·70	137·67	68·34	18 38 22·9	+576·6
	Moon I. L.	- -	20 28 31·54	132·71	67·03	16 36 50·4	636·8
	ρ Capricorni	5	20 20 59·70			18 16	
	τ^2 Capricorni	5	20 31 33·87			S. 15 26	
12	ρ Capricorni	5	20 20 59·69			S. 18 16	
	τ^2 Capricorni	5	20 31 33·86			15 26	
	Moon I. U.	8·5	20 54 36·42	128·20	65·82	14 24 26·2	+685·3
	Moon I. L.	- -	21 19 50·45	124·24	64·74	12 3 25·0	723·2
	ν Aquarii -	4½	21 2 5·22			11 56	
	ξ Aquarii -	4½	21 30 25·19			S. 8 28	
13	ν Aquarii -	4½	21 2 5·20			S. 11 56	
	ξ Aquarii -	4½	21 30 25·18			8 28	
	Moon I. U.	9·5	21 44 20·58	120·89	63·80	9 35 49·5	+751·2
	Moon I. L.	- -	22 8 14·24	118·17	63·03	7 3 31·8	770·4
	γ Aquarii -	3½	22 14 32·84			S. 2 5	
	π Aquarii -	4½	22 18 14·98			N. 0 41	
14	γ Aquarii -	3½	22 14 32·83			S. 2 5	
	π Aquarii -	4½	22 18 14·97			N. 0 41	
	Moon I. U.	10·5	22 31 39·09	116·08	62·42	S. 4 28 13·2	+781·4
	Moon I. L.	- -	22 54 42·68	114·62	61·99	S. 1 51 28·5	784·8
	β Piscium -	4½	22 56 52·67			N. 3 4	
	γ Piscium -	4	23 10 2·01			N. 2 32	
15	β Piscium -	4½	22 56 52·66			N. 3 4	
	γ Piscium -	4	23 10 2·01			2 32	
	Moon I. U.	11·6	23 17 32·37	113·76	61·72	0 45 13·7	+781·1
	Moon I. L.	- -	23 40 15·23	113·48	61·61	3 20 28·9	770·3
	ι Piscium *	4½	23 32 52·60			4 53	
	ω Piscium *	4	23 52 15·04			N. 6 6	
16	ι Piscium *	4½	23 32 52·60			N. 4 53	
	ω Piscium *	4	23 52 15·04			6 6	
	Moon I. U.	12·6	0 2 57·96	113·73	61·66	5 52 54·6	+752·8
	Moon I. L.	- -	0 25 46·83	114·50	61·85	8 21 9·4	728·5
	d Piscium *	5½	0 13 31·42			7 25	
	45 Piscium *	6	0 18 36·58			N. 6 56	
17	d Piscium *	5½	0 13 31·41			N. 7 25	
	45 Piscium *	6	0 18 36·58			6 56	
	Moon I. U.	13·6	0 48 47·65	115·72	62·18	N. 10 43 52·0	+697·4

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			h m s	s	s	° ′ ″	″
Oct. 17	Moon I. L.	- -	1 12 5·59	117·34	62·62	N. 12 59 40·8	+659·6
	η Piscium -	3½	1 24 7·76			14 38	
	101 Piscium *	6	1 28 25·62			N. 13 57	
18	η Piscium -	3½	1 24 7·77			N. 14 38	
	101 Piscium *	6	1 28 25·63			13 57	
	Moon II. C.	14·7	1 37 51·48	119·40	63·16	15 7 13·6	+614·7
	β Arietis - -	2½	1 47 3·00			80 8	
	α Arietis - -	2	1 59 25·72			N. 22 48	
19	β Arietis - -	2½	1 47 3·01			N. 20 8	
	α Arietis - -	2	1 59 25·73			22 48	
	Moon II. L.	- -	2 1 57·54	121·65	63·78	17 5 6·9	+563·0
	Moon II. U.	15·7	2 26 31·60	124·05	64·43	18 51 58·0	504·4
	41 Arietis - -	4	2 41 58·88			26 41	
	ε Arietis - -	4½	2 51 21·32			N. 20 47	
20	41 Arietis - -	4	2 41 53·90			N. 26 41	
	ε Arietis - -	4½	2 51 21·34			20 47	
	Moon II. L.	- -	2 51 35·08	126·53	65·12	20 26 24·9	+439·0
	Moon II. U.	16·7	3 17 8·23	128·97	65·79	21 47 8·9	367·3
	27 Tauri - -	4	3 40 59·35			23 38	
	A' Tauri - -	4½	3 56 34·05			N. 21 42	
21	27 Tauri - -	4	3 40 59·37			N. 23 38	
	A' Tauri - -	4½	3 56 34·07			21 42	
	Moon II. L.	- -	3 43 9·65	131·23	66·41	22 52 56·3	+289·6
	Moon II. U.	17·8	4 9 36·73	133·22	66·97	23 42 39·7	206·8
	υ' Tauri - -	6	4 19 4·16			22 41	
	τ Tauri - -	4½	4 33 59·48			N. 22 41	
22	υ' Tauri - -	6	4 19 4·18			N. 22 41	
	τ Tauri - -	4½	4 33 59·50			22 41	
	Moon II. L.	- -	4 36 25·49	134·83	67·43	24 15 22·8	+119·7
	Moon II. U.	18·8	5 3 30·91	135·99	67·76	24 30 20·8	+ 29·5
	β Tauri - -	2	5 17 35·64			28 29	
	ζ Tauri - -	3½	5 29 25·31			N. 21 3	
23	β Tauri - -	2	5 17 35·67			N. 28 29	
	ζ Tauri - -	3½	5 29 25·34			21 3	
	Moon II. L.	- -	5 30 47·26	136·65	67·97	24 27 3·2	− 62·7
	Moon II. U.	19·9	5 58 8·57	136·82	68·05	24 5 14·3	155·5
	η Geminor.	3½	6 6 34·04			22 33	
	μ Geminor.	3	6 14 37·84			N. 22 35	
24	η Geminor.	3½	6 6 34·07			N. 22 33	
	μ Geminor.	3	6 14 37·87			22 35	
	Moon II. L.	- -	6 25 29·19	136·54	68·01	23 24 54·6	−247·6
	Moon II. U.	20·9	6 52 44·12	135·89	67·87	22 26 19·5	−337·9
	ν Geminor.	4½	7 27 25·81			27 12	
	κ Geminor.	3½	7 36 7·48			N. 24 44	
25	ν Geminor.	4½	7 27 25·84			N. 27 12	
	κ Geminor.	3½	7 36 7·51			N. 24 44	

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			h m s	s	s	° ′ ″	″
Oct. 25	Moon II. L.	- -	7 19 49·58	134·98	67·66	N.21 9 58·0	−425·1
	Moon II. U.	21·9	7 46 43·20	133·95	67·40	19 36 32·2	508·4
	μ^1 Cancri - -	5	7 59 39·04			21 59	
	ζ Cancri - -	5½	8 4 18·27			N.18 4	
26	μ^1 Cancri - -	5	7 59 39·08			N.21 59	
	ζ Cancri - -	5½	8 4 18·31			18 4	
	Moon II. L.	- -	8 13 24·25	132·91	67·14	17 46 55·4	−586·9
	Moon II. U.	23·0	8 39 53·61	132·02	66·90	15 42 9·9	659·7
	α Cancri - *	4	8 50 56·53			12 24	
	83 Cancri - -	6	9 11 16·60			N.18 17	
27	α Cancri - *	4	8 50 56·57			N.12 24	
	83 Cancri - -	6	9 11 16·63			18 17	
	Moon II. L.	- -	9 6 13·79	131·40	66·73	13 23 28·0	−726·1
	Moon II. U.	24·0	9 32 28·73	131·17	66·65	10 52 11·4	785·3
	π Leonis - *	5	9 52 55·09			8 42	
	α Leonis - *	1½	10 1 1·11			N.12 38	
28	π Leonis - *	5	9 52 55·12			N. 8 42	
	α Leonis - *	1½	10 1 1·14			12 38	
	Moon II. L.	- -	9 58 43·70	131·42	66·69	8 9 52·5	−836·4
	Moon II. U.	25·0	10 25 5·09	132·25	66·88	5 18 15·6	878·1
	55 Leonis - -	6	10 48 36·26			1 29	
	p^1 Leonis - -	5	11 6 41·67			N. 0 41	
29	Moon II. L.	- -	10 51 40·20	133·72	67·23	N. 2 19 19·9	−909·3
	Moon II. U.	26·1	11 18 37·00	135·87	67·75	S. 0 44 38·1	928·2
30	Moon II. L.	- -	11 46 3·87	138·73	68·45	S. 3 51 2·3	−933·3
	Moon II. U.	27·1	12 14 9·09	142·26	69·31	6 56 54·7	922·6
31	Moon II. L.	- -	12 43 0·45	146·40	70·33	S. 9 58 54·8	−894·3
	Moon II. U.	28·1	13 12 44·52	151·01	71·44	12 53 21·7	846·8
Nov. 1	Moon II. L.	- -	13 43 25·61	155·87	72·60	S.15 36 18·2	−779·2
	Moon II. U.	29·2	14 15 4·97	160·66	73·76	18 3 40·8	691·2
2	Moon I. L.	- -	14 45 9·97	164·84	74·79	S.20 11 29·9	−583·9
3	Moon I. U.	0·8	15 18 30·14	168·34	75·64	S.21 56 9·1	−460·0
	Moon I. L.	- -	15 52 25·05	170·56	76·16	23 14 41·6	323·7
4	Moon I. U.	1·9	16 26 37·23	171·18	76·32	S.24 5 8·9	−180·1
	Moon I. L.	- -	17 0 46·42	170·05	76·08	24 26 40·2	− 35·4
5	Moon I. U.	2·9	17 34 31·84	167·24	75·45	S.24 19 37·2	+104·6
	Moon I. L.	- -	18 7 34·62	163·00	74·47	23 45 28·4	234·8
6	δ Sagittarii	3½	18 12 9·11			S.29 53	
	λ Sagittarii	3	18 19 26·88			25 30	
	Moon I. U.	3·9	18 39 39·76	157·72	73·24	22 46 33·0	+351·9
	Moon I. L.	- -	19 10 37·30	151·81	71·81	21 25 43·6	+453·6
	ξ^2 Sagittarii	4	18 49 29·44			21 17	
	o Sagittarii	4	18 56 24·46			S.21 56	
7	ξ^2 Sagittarii	4	18 49 29·43			S.21 17	

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			h m s	s	s	° ′ ″	″
Nov. 7	o Sagittarii	4	18 56 24·45			S. 21 56	
	Moon I. U.	5·0	19 40 22·32	145·70	70·32	19 46 8·7	+539·5
	Moon I. L.	- -	20 8 54·43	139·71	68·82	17 50 58·0	609·8
	α^2 Capricorni	3½	20 10 23·84			12 58	
	ρ Capricorni	5	20 20 59·26			S. 18 16	
8	α^2 Capricorni	3½	20 10 23·83			S. 12 58	
	ρ Capricorni	5	20 20 59·25			18 16	
	Moon I. U.	6·0	20 36 16·82	134·11	67·40	15 43 10·0	+665·9
	Moon I. L.	- -	21 2 35·25	129·07	66·08	13 25 28·2	709·1
	ν Aquarii -	4½	21 2 4·81			11 56	
	ι Capricorni	4½	21 14 34·06			S. 17 25	
9	ν Aquarii -	4½	21 2 4·80			S. 11 56	
	ι Capricorni	4½	21 14 34·04			17 25	
	Moon I. U.	7·0	21 27 57·09	124·69	64·91	11 0 18·3	+740·9
	Moon I. L.	- -	21 52 30·61	121·02	63·91	8 29 47·7	762·7
	30 Aquarii -	5½	21 56 1·63			7 11	
	θ Aquarii -	4½	22 9 33·78			S. 8 28	
10	30 Aquarii -	5½	21 56 1·61			S. 7 11	
	θ Aquarii -	4½	22 9 33·77			8 28	
	Moon I. U.	8·1	22 16 24·43	118·08	63·10	5 55 48·6	+775·8
	Moon I. L.	- -	22 39 47·29	115·85	62·46	3 20 0·2	781·1
	η Aquarii -	3½	22 28 16·71			S. 0 50	
	1 Piscium -	6	22 47 56·92			N. 0 20	
11	η Aquarii -	3½	22 28 16·70			S. 0 50	
	1 Piscium -	6	22 47 56·91			N. 0 20	
	Moon I. U.	9·1	23 2 47·70	114·33	62·02	S. 0 43 50·3	+779·4
	Moon I. L.	- -	23 25 33·84	113·47	61·75	N. 1 51 19·5	771·2
	κ Piscium -	4½	23 19 52·65			0 30	
	ι Piscium *	4½	23 32 52·41			N. 4 53	
12	κ Piscium -	4½	23 19 52·64			N. 0 30	
	ι Piscium *	4½	23 32 52·40			4 53	
	Moon I. U.	10·1	23 48 13·54	113·25	61·66	4 24 12·8	+756·7
	Moon I. L.	- -	0 10 54·12	113·61	61·73	6 53 35·7	736·1
	35 Piscium *	6	0 7 53·79			8 3	
	45 Piscium *	6	0 18 36·48			N. 6 56	
13	35 Piscium *	6	0 7 53·78			N. 8 3	
	45 Piscium *	6	0 18 36·48			6 56	
	Moon I. U.	11·2	0 33 42·39	114·53	61·95	9 18 14·4	+709·3
	Moon I. L.	- -	0 56 44·65	115·93	62·31	11 36 54·0	676·2
	δ Piscium *	4½	0 41 32·99			6 50	
	ϵ Piscium *	4	0 55 48·61			N. 7 9	
14	δ Piscium *	4½	0 41 32·99			N. 6 50	
	ϵ Piscium *	4	0 55 48·61			7 9	
	Moon I. U.	12·2	1 20 6·38	117·76	62·78	13 48 17·5	+636·6
	Moon I. L.	- -	1 43 52·30	119·95	63·35	15 51 5·8	+590·3
	β Arietis - -	2½	1 47 3·12			20 8	
	α Arietis - -	2	1 59 25·89			N. 22 48	

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			h m s	s	s	° ′ ″	″
Nov. 15	β Arietis - -	2½	1 47 3·13			N. 20 8	
	α Arietis - -	2	1 59 25·89			22 48	
	Moon I. U.	13·2	2 8 6·12	122·40	63·99	17 43 56·9	+537·0
	Moon I. L.	- -	2 32 50·36	125·00	64·67	19 25 26·9	476·8
	40 Arietis - -	6	2 40 50·18			17 42	
	ε Arietis - -	4½	2 51 21·63			N. 20 47	
16	40 Arietis - -	6	2 40 50·19			N. 17 42	
	ε Arietis - -	4½	2 51 21·64			20 47	
	Moon I. U.	14·3	2 58 6·12	127·63	65·36	20 54 12·8	+409·7
	Moon I. L.	- -	3 23 53·01	130·16	66·02	22 8 53·2	336·0
	17 Tauri - -	4	3 36 43·39			23 41	
	27 Tauri - -	4	3 40 59·81			N. 23 38	
17	17 Tauri - -	4	3 36 43·40			N. 23 41	
	27 Tauri - -	4	3 40 59·82			23 38	
	Moon II. U.	15·3	3 52 22·20	132·54	66·62	23 8 12·6	+256·3
	υ¹ Tauri - -	4½	4 18 5·37			22 30	
	τ Tauri - -	4½	4 34 0·06			N. 22 41	
18	υ¹ Tauri - -	4½	4 18 5·39			N. 22 30	
	τ Tauri - -	4½	4 34 0·08			22 41	
	Moon II. L.	- -	4 19 4·47	134·43	67·12	23 51 3·4	+171·4
	Moon II. U.	16·3	4 46 6·64	135·84	67·51	24 16 31·3	+ 82·6
	β Tauri - -	2	5 17 36·36			28 29	
	ζ Tauri - -	3½	5 29 26·01			N. 21 3	
19	β Tauri - -	2	5 17 36·38			N. 28 29	
	ζ Tauri - -	3½	5 29 26·04			21 3	
	Moon II. L.	- -	5 13 22·42	136·69	67·75	24 23 55·8	− 8·8
	Moon II. U.	17·4	5 40 44·83	136·95	67·85	24 12 55·0	101·4
	η Geminor.	3½	6 6 34·81			22 33	
	μ Geminor.	3	6 14 38·62			N. 22 35	
20	η Geminor.	3½	6 6 34·84			N. 22 33	
	μ Geminor.	3	6 14 38·65			22 35	
	Moon II. L.	- -	6 8 6·83	136·63	67·81	23 43 24·9	−193·4
	Moon II. U.	18·4	6 35 21·96	135·82	67·64	22 55 40·2	283·5
	δ Geminor.	3½	7 11 54·48			22 14	
	63 Geminor.	5½	7 19 34·50			N. 21 44	
21	δ Geminor.	3½	7 11 54·51			N. 22 14	
	63 Geminor.	5½	7 19 34·54			21 44	
	Moon II. L.	- -	7 2 24·85	134·61	67·36	21 50 13·2	−370·3
	Moon II. U.	19·4	7 29 11·63	133·15	67·02	20 27 49·8	452·8
	g Geminor.	5½	7 38 9·42			18 51	
	μ² Cancri - -	5	7 59 39·94			N. 21 59	
22	g Geminor.	5½	7 38 9·46			N. 18 51	
	μ² Cancri -	5	7 59 39·98			21 59	
	Moon II. L.	- -	7 55 40·14	131·59	66·65	18 49 28·1	−529·9
	Moon II. U.	20·5	8 21 50·06	130·08	66·28	16 56 16·1	−601·1
	δ Cancri -	4	8 36 51·67			18 40	
	α Cancri - *	4	8 50 57·40			N. 12 24	

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			h m s	s	s	° ′ ″	″
Nov. 23	δ Cancri - -	4	8 36 51·70			N. 18 40	
	α Cancri - *	4	8 50 57·44			12 24	
	Moon II. L.	- -	8 47 42·87	128·76	65·96	14 49 28·7	−665·7
	Moon II. U.	21·5	9 13 21·68	127·77	65·71	12 30 25·9	723·6
	B.A.C. 3336*	5½	9 38 54·14			7 21	
	π Leonis - *	5	9 52 55·94			N. 8 42	
24	B.A.C. 3336*	5½	9 38 54·18			N. 7 21	
	π Leonis - *	5	9 52 55·97			8 42	
	Moon II. L.	- -	9 38 51·12	127·22	65·57	10 0 32·5	−774·1
	Moon II. U.	22·5	10 4 17·05	127·20	65·58	7 21 19·5	816·8
	ρ Leonis - *	4	10 25 33·23			10 1	
	34 Sextantis*	6	10 35 30·42			N. 4 18	
25	ρ Leonis - *	4	10 25 33·26			N. 10 1	
	34 Sextantis*	6	10 35 30·45			4 18	
	Moon II. L.	- -	10 29 46·42	127·81	65·73	4 34 23·3	−851·1
	Moon II. U.	23·6	10 55 27·14	129·10	66·07	N. 1 41 29·5	876·2
	φ Leonis - -	4½	11 9 39·17			S. 2 54	
	υ Leonis - -	4½	11 29 53·32			0 4	
26	φ Leonis - -	4½	11 9 39·21			S. 2 54	
	υ Leonis - -	4½	11 29 53·35			0 4	
	Moon II. L.	- -	11 21 27·77	131·13	66·58	1 15 24·9	−891·0
	Moon II. U.	24·6	11 47 57·35	133·93	67·29	S. 4 14 8·7	894·2
	η Virginis -	3½	12 12 50·83			N. 0 6	
	γ¹ Virginis -	2½	12 34 40·11			S. 0 41	
27	η Virginis -	3½	12 12 50·86			N. 0 6	
	γ¹ Virginis -	2½	12 34 40·14			S. 0 41	
	Moon II. L.	- -	12 15 5·10	137·49	68·18	7 12 13·9	−884·3
	Moon II. U.	25·6	12 42 59·98	141·78	69·25	10 6 51·5	859·4
	θ Virginis -	4½	13 2 48·28			4 48	
	α Virginis -	1	13 17 55·35			S. 10 26	
28	Moon II. L.	- -	13 11 50·10	146·68	70·44	S. 12 54 51·8	−817·7
	Moon II. U.	26·7	13 41 41·81	152·01	71·73	15 32 44·5	757·8
29	Moon II. L.	- -	14 12 38·84	157·50	73·03	S. 17 56 42·7	−678·6
	Moon II. U.	27·7	14 44 40·92	162·78	74·27	20 2 53·8	580·0
30	Moon II. L.	- -	15 17 42·72	167·38	75·34	S. 21 47 30·3	−463·2
	Moon II. U.	28·8	15 51 33·32	170·82	76·14	23 7 10·5	331·2
Dec. 1	Moon II. L.	- -	16 25 56·20	172·69	76·57	S. 23 59 18·0	−188·7
2	Moon I. U.	0·4	16 57 57·36	172·73	76·59	S. 24 22 21·1	− 41·6
	Moon I. L.	- -	17 32 21·17	170·91	76·16	24 16 4·3	+103·6
3	Moon I. U.	1·4	18 6 12·28	167·34	75·34	S. 23 41 26·1	+240·9
	Moon I. L.	- -	18 39 11·87	162·40	74·20	22 40 33·2	365·4
4	Moon I. U.	2·4	19 11 6·19	156·54	72·81	S. 21 16 20·0	+473·9
	Moon I. L.	- -	19 41 47·10	150·25	71·31	19 32 8·8	+565·0
5	f Sagittarii	5	19 38 18·37			S. 20 5	

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			h m s	s	s	° ′ ″	″
Dec. 5	*g* Sagittarii	5½	19 50 7·17			S. 15 51	
	Moon I. U.	3·5	20 11 11·98	143·93	69·77	17 31 29·4	+638·7
	Moon I. L.	- -	20 39 22·52	137·91	68·27	15 17 46·1	695·9
	ρ Capricorni	5	20 20 58·95			18 16	
	θ Capricorni	4	20 58 11·32			S. 17 47	
6	*ρ* Capricorni	5	20 20 58·94			S. 18 16	
	θ Capricorni	4	20 58 11·31			17 47	
	Moon I. U.	4·5	21 6 23·80	132·41	66·88	12 54 6·8	+738·3
	Moon I. L.	- -	21 32 23·00	127·58	65·63	10 23 18·0	767·7
	β Aquarii -	3	21 24 17·69			6 11	
	ξ Aquarii -	4½	21 30 24·47			S. 8 28	
7	*β* Aquarii -	3	21 24 17·68			S. 6 11	
	ξ Aquarii -	4½	21 30 24·46			8 28	
	Moon I. U.	5·5	21 57 28·60	123·48	64·56	7 47 45·9	+785·9
	Moon I. L.	- -	22 21 49·67	120·15	63·68	5 9 34·6	794·5
	ζ Aquarii -	3½	22 21 43·96			0 44	
	η Aquarii -	3½	22 28 16·39			S. 0 50	
8	*ζ* Aquarii -	3½	22 21 43·95			S. 0 44	
	η Aquarii -	3½	22 28 16·38			0 50	
	Moon I. U.	6·6	22 45 35·38	117·59	62·99	S. 2 30 31·6	+794·7
	Moon I. L.	- -	23 8 54·82	115·78	62·49	N. 0 7 49·7	787·7
	γ Piscium -	4	23 10 1·48			2 32	
	κ Piscium -	4½	23 19 52·36			N. 0 30	
9	*γ* Piscium -	4	23 10 1·47			N. 2 32	
	κ Piscium -	4½	23 19 52·35			0 30	
	Moon I. U.	7·6	23 31 56·78	114·67	62·18	2 44 7·0	+774·2
	Moon I. L.	- -	23 54 49·59	114·25	62·05	5 17 6·4	754·7
	26 Piscium *	6	23 48 5·39			6 18	
	ω Piscium *	4	23 52 14·62			N. 6 6	
10	26 Piscium *	6	23 48 5·38			N. 6 18	
	ω Piscium *	4	23 52 14·61			6 6	
	Moon I. U.	8·6	0 17 41·17	114·45	62·09	7 45 37·0	+729·5
	Moon I. L.	- -	0 40 38·83	115·25	62·30	10 8 30·6	698·6
	δ Piscium *	4½	0 41 32·79			6 50	
	ε Piscium *	4	0 55 48·43			N. 7 9	
11	*δ* Piscium *	4½	0 41 32·78			N. 6 50	
	ε Piscium *	4	0 55 48·42			7 9	
	Moon I. U.	9·7	1 3 49·38	116·59	62·64	12 24 39·3	+661·9
	Moon I. L.	- -	1 27 18·81	118·39	63·11	14 32 52·5	619·3
	ρ Piscium -	5	1 18 50·79			18 27	
	η Piscium -	3½	1 24 7·71			N. 14 38	
12	*ρ* Piscium -	5	1 18 50·78			N. 18 27	
	η Piscium -	3½	1 24 7·70			14 38	
	Moon I. U.	10·7	1 51 12·33	120·59	63·68	16 31 57·1	+570·4
	Moon I. L.	- -	2 15 34·10	123·08	64·31	18 20 36·6	+515·1
	α Arietis - -	2	1 59 25·83			22 48	
	η Arietis - -	5½	2 5 6·66			N. 20 34	

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			h m s	s	s	° ′ ″	″
Dec. 13	α Arietis - -	2	1 59 25·82			N.22 48	
	η Arietis - -	5½	2 5 6·65			20 34	
	Moon I. U.	11·7	2 40 27·07	125·77	65·00	19 57 32·2	+453·1
	Moon I. L.	- -	3 5 52·67	128·50	65·69	21 21 23·3	384·3
	ε Arietis - -	4½	2 51 21·70			20 47	
	δ Arietis - -	4½	3 3 46·67			N.19 12	
14	ε Arietis - -	4½	2 51 21·70			N.20 47	
	δ Arietis - -	4½	3 3 46·67			19 12	
	Moon I. U.	12·8	3 31 50·71	131·15	66·35	22 30 50·2	+309·1
	Moon I. L.	- -	3 58 19·22	133·55	66·94	23 24 37·0	227·8
	η Tauri - -	3	3 39 19·45			23 40	
	A¹ Tauri - -	4½	3 56 34·79			N.21 42	
15	η Tauri - -	3	3 39 19·45			N.23 40	
	A¹ Tauri - -	4½	3 56 34·79			21 42	
	Moon I. U.	13·8	4 25 14·36	135·56	67·44	24 1 36·2	+141·3
	Moon I. L.	- -	4 52 30·67	137·06	67·80	24 20 51·1	+ 50·7
	τ Tauri - -	4½	4 34 0·41			22 41	
	ι Tauri - -	5	4 54 53·47			N.21 23	
16	τ Tauri - -	4½	4 34 0·42			N.22 41	
	ι Tauri - -	5	4 54 53·48			21 23	
	Moon I. U.	14·8	5 20 1·37	137·95	68·02	24 21 41·8	— 42·6
	χ¹ Orionis, -	4½	5 46 15·16			20 15	
	η Geminor.	3½	6 6 35·39			N.22 33	
17	χ¹ Orionis -	4½	5 46 15·17			N.20 15	
	η Geminor.	3½	6 6 35·40			22 33	
	Moon II. L.	- -	5 49 55·06	138·19	68·08	24 3 46·9	—136·7
	Moon II. U.	15·9	6 17 31·49	137·78	67·98	23 27 5·5	229·9
	ε Geminor.	3½	6 35 29·11			25 16	
	ζ Geminor.	4	6 55 57·84			N.20 46	
18	ε Geminor.	3½	6 35 29·13			N.25 16	
	ζ Geminor.	4	6 55 57·87			20 46	
	Moon II. L.	- -	6 44 59·47	136·80	67·75	22 31 58·3	—320·7
	Moon II. U.	16·9	7 12 12·95	135·38	67·41	21 19 5·2	407·3
	f Geminor.	6	7 31 32·70			17 59	
	κ Geminor.	3½	7 36 9·19			N.24 44	
19	f Geminor.	6	7 31 32·73			N.17 59	
	κ Geminor.	3½	7 36 9·21			24 44	
	Moon II. L.	- -	7 39 7·45	133·66	66·99	19 49 24·3	—488·5
	Moon II. U.	17·9	8 5 40·31	131·80	66·54	18 4 7·3	563·2
	d² Cancri - -	6	8 18 3·27			17 30	
	η Cancri - -	6	8 24 45·63			N.20 55	
20	d² Cancri - -	6	8 18 3·30			N.17 30	
	η Cancri - -	6	8 24 45·66			20 55	
	Moon II. L.	- -	8 31 50·86	129·97	66·09	16 4 36·7	—630·6
	Moon II. U.	19·0	8 57 40·30	128·31	65·69	13 52 22·8	—690·3
	10 Leonis - *	5½	9 29 57·34			7 27	
	ι Leonis - *	3½	9 33 49·06			N.10 31	

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			h m s	s	s	° ′ ″	″
Dec. 21	10 Leonis - *	5½	9 29 57·37			N. 7 27	
	o Leonis - *	3½	9 33 49·09			10 31	
	Moon II. L.	- -	9 23 11·62	126·97	65·37	11 29 1·0	−741·9
	Moon II. U.	20·0	9 48 29·22	126·05	65·15	8 56 10·0	785·2
	α Leonis - *	1½	10 1 2·87			12 38	
	ρ Leonis - *	4	10 25 34·12			N. 10 1	
22	α Leonis - *	1½	10 1 2·90			N. 12 38	
	ρ Leonis - *	4	10 25 34·15			10 1	
	Moon II. L.	- -	10 13 38·85	125·65	65·07	6 15 31·5	−819·8
	Moon II. U.	21·1	10 38 47·35	125·87	65·15	N. 3 28 50·9	845·5
	φ Leonis - -	4½	11 9 40·06			S. 2 54	
	τ Leonis - -	5	11 20 51·65			N. 3 37	
23	φ Leonis - -	4½	11 9 40·10			S. 2 54	
	τ Leonis - -	5	11 20 51·68			N. 3 37	
	Moon II. L.	- -	11 4 2·33	126·75	65·40	N. 0 37 56·9	−861·9
	Moon II. U.	22·1	11 29 32·13	128·35	65·83	S. 2 15 15·0	868·4
	β Virginis -	3½	11 43 31·56			N. 2 33	
	η Virginis -	3½	12 12 51·70			N. 0 6	
24	β Virginis -	3½	11 43 31·60			N. 2 33	
	η Virginis -	3½	12 12 51·73			N. 0 6	
	Moon II. L.	- -	11 55 25·55	130·68	66·46	S. 5 8 41·1	−864·1
	Moon II. U.	23·1	12 21 51·51	133·77	67·26	8 0 7·0	848·2
	ψ Virginis -	5	12 47 11·61			8 47	
	g Virginis -	6	13 0 40·97			S. 10 0	
25	ψ Virginis -	5	12 47 11·65			S. 8 47	
	g Virginis -	6	13 0 41·00			10 0	
	Moon II. L.	- -	12 48 58·82	137·57	68·24	10 47 5·1	−819·3
	Moon II. U.	24·2	13 16 55·65	142·01	69·35	13 26 52·3	776·1
	89 Virginis -	5	13 42 23·32			17 27	
	B.A.C. 4700	5½	14 3 18·84			S. 15 39	
26	89 Virginis -	5	13 42 23·36			S. 17 27	
	B.A.C. 4700	5½	14 3 18·88			15 39	
	Moon II. L.	- -	13 45 48·91	146·94	70·57	15 56 30·4	−717·5
	Moon II. U.	25·2	14 15 43·29	152·15	71·83	18 12 48·0	642·5
	α² Librae - -	2½	14 43 15·18			15 28	
	ι¹ Librae - -	4½	15 4 21·98			S. 19 16	
27	α² Librae - -	2½	14 43 15·21			S. 15 28	
	ι¹ Librae - -	4½	15 4 22·01			19 16	
	Moon II. L.	- -	14 46 40·47	157·34	73·07	20 12 24·3	−550·7
	Moon II. U.	26·2	15 18 37·82	162·12	74·18	S. 21 51 59·9	442·6
28	Moon II. L.	- -	15 51 27·86	166·05	75·09	S. 23 8 28·6	−320·0
	Moon II. U.	27·3	16 24 57·89	168·71	75·68	23 59 14·8	186·2
29	Moon II. L.	- -	16 58 50·70	169·79	75·91	S. 24 22 30·6	− 45·8
	Moon II. U.	28·3	17 32 46·01	169·12	75·74	24 17 29·6	+ 95·6
30	Moon II. L.	- -	18 6 22·94	166·75	75·18	S. 23 44 33·9	+232·4
	Moon II. U.	29·4	18 39 22·32	162·93	74·27	22 45 11·2	359·3
31	Moon I. L.	- -	19 9 2·60	158·22	73·10	S. 21 21 44·9	+472·4

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In the Year 1861 there will be three Eclipses of the Sun, one of the Moon, and a Transit of Mercury over the Sun's disc.

I.—*An Annular Eclipse of the SUN, January* 10, 1861, *invisible at Greenwich.*

ELEMENTS.					
		d	h	m	s
Greenwich Mean Time of ☌ in R.A.	Jan.	10	15	23	58·6
☉'s and ☾'s Right Ascension - - - - -			19	30	40·69
			°	′	″
☾'s Declination - - - - - - - - - -	S.		21	59	34·0
☉'s Declination - - - - - - - - - -	S.		21	49	20·6
☾'s Hourly Motion in R.A. - - - - - -				34	17·1
☉'s Hourly Motion in R.A. - - - - - -				2	42·8
☾'s Hourly Motion in Declination - - -	N.			7	59·2
☉'s Hourly Motion in Declination - - -	N.				23·5
☾'s Equatorial Horizontal Parallax - -				56	46·7
☉'s Equatorial Horizontal Parallax - -					8·7
☾'s True Semidiameter - - - - - - -				15	30·4
☉'s True Semidiameter - - - - - - -				16	17·9

Begins on the Earth generally, Jan. $10^d\ 12^h\ 34^m\cdot9$, Mean Time at Greenwich, in Longitude 75° 12′ E. of Greenwich, and Latitude 19° 32′ S.

Central Eclipse begins generally, January $10^d\cdot13^h\ 38^m\cdot6$, in Longitude 57° 43′ E. of Greenwich, and Latitude 22° 54′ S.

Central Eclipse at Noon, January $10^d\ 15^h\ 24^m\cdot0$, in Longitude 131° 3′ E. of Greenwich, and Latitude 32° 24′ S.

Central Eclipse ends generally, January $10^d\ 17^h\ 19^m\cdot5$, in Longitude 169° 29′ W. of Greenwich, and Latitude 4° 11′ N.

Ends on the Earth generally, January $10^d\ 18^h\ 23^m\cdot2$, in Longitude 173° 13′ E. of Greenwich, and Latitude 7° 35′ N.

The central and limiting lines of this Eclipse, in the diagram in page 429, have been laid down from the following calculated positions:—

Line of Central Eclipse.

Longitude.		Latitude.		Longitude.		Latitude.		Longitude.		Latitude.	
°	′	°	′	°	′	°	′	°	′	°	′
57	43 E.	22	54 S.	107	51 E.	36	16 S.	158	33 E.	14	29 S.
66	35	26	26	117	38	35	48	165	0	9	46
73	10	28	53	127	39	33	37	171	25	5	30
80	5	31	11	137	30	29	25	176	54 E.	2	17 S.
88	47	33	37	145	25	24	28	177	32 W.	0	36 N.
98	10 E.	35	26 S.	152	8 E.	19	28 S.	169	29 W.	4	11 N.

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Northern line of simple contact.

Longitude.	Latitude.	Longitude.	Latitude.	Longitude.	Latitude.
° ′	° ′	° ′	° ′	° ′	° ′
68 43 E.	7 48 N.	106 5 E.	3 28 S.	147 15 E.	16 23 N.
76 33	4 41	113 17	3 21	153 29	20 54
80 45	3 4	120 32	1 41 S.	159 27	24 50
86 3	1 9 N.	128 0	1 54 N.	164 53	28 2
92 11	0 48 S.	134 37	6 28	169 21	30 24
98 55 E.	2 28 S.	140 55 E.	11 25 N.	178 3 E.	34 33 N.

Southern line of simple contact.

Longitude.	Latitude.	Longitude.	Latitude.	Longitude.	Latitude.
° ′	° ′	° ′	° ′	° ′	° ′
23 27 E.	55 24 S.	107 50 E.	73 22 S.	174 59 W.	48 25 S.
34 52	60 38	129 0	72 2	169 37	44 19
43 43	64 5	147 50	68 35	164 18	40 34
54 50	67 33	163 29	62 49	158 57	37 12
68 54	70 36	172 39	57 33	153 43	34 19
86 45 E.	72 45 S.	179 17 E.	52 50 S.	145 28 W.	30 39 S.

Eclipse begins at Sun-set.

Longitude.	Latitude.	Longitude.	Latitude.	Longitude.	Latitude.
° ′	° ′	° ′	° ′	° ′	° ′
177 57 E.	34 28 N.	158 37 W.	13 19 N.	145 12 W.	15 56 S.
177 25 W.	33 23	154 33	5 50 N.	143 49	20 9
171 3	29 11	151 43	0 2 S.	142 42	24 40
164 30 W.	22 5 N.	148 5 W.	8 26 S.	142 41 W.	28 36 S.

Eclipse ends at Sun-rise.

Longitude.	Latitude.	Longitude.	Latitude.	Longitude.	Latitude.
° ′	° ′	° ′	° ′	° ′	° ′
64 24 E.	6 36 N.	42 53 E.	21 16 S.	27 19 E.	46 9 S.
58 40	2 15 N.	39 35	27 1	24 15	50 13
52 47	5 0 S.	34 45	35 10	22 2	53 41
47 10 E.	13 49 S.	30 6 E.	42 15 S.	22 49 E.	55 14 S.

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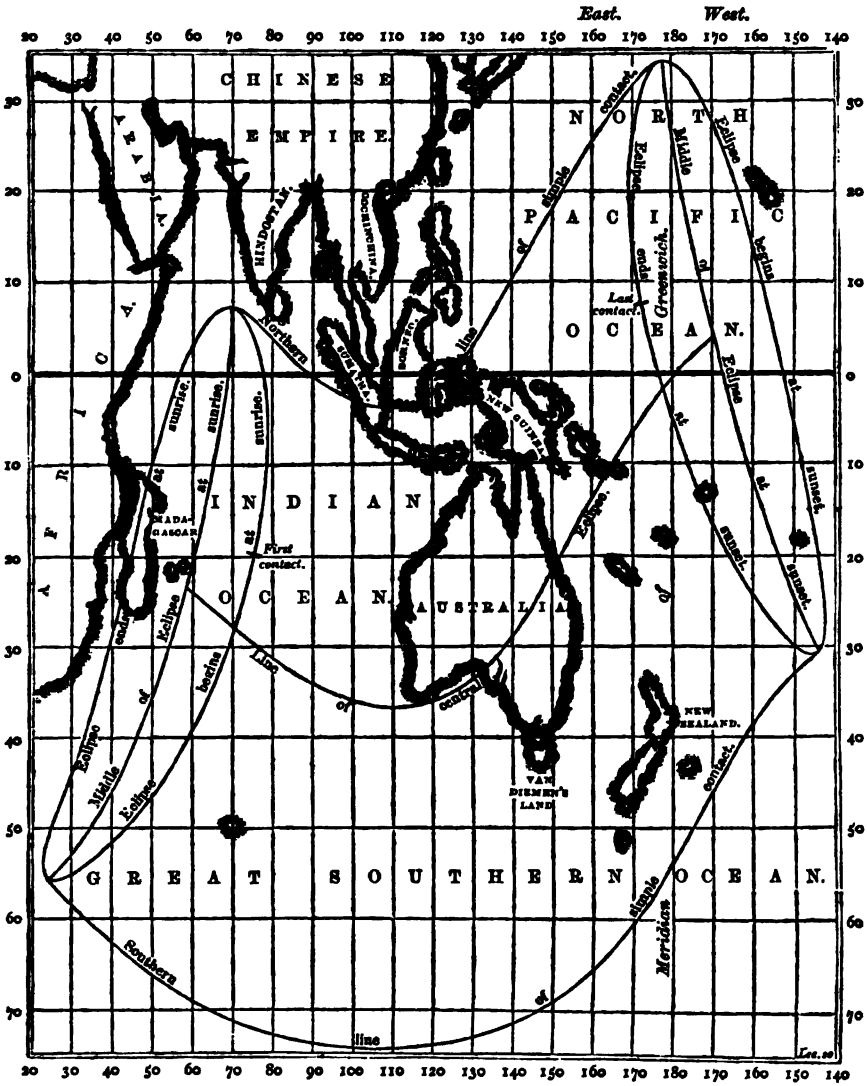
PATH OF THE MOON'S PENUMBRA UPON THE SURFACE OF THE EARTH, DURING THE ANNULAR ECLIPSE OF THE SUN, JANUARY 10, 1861.



II.—*An Annular Eclipse of the SUN, July 7, 1861, invisible at Greenwich.*

ELEMENTS.				
		d	h m	s
Greenwich Mean Time of ☌ in R.A.	July	7	14 15	7·3
☉'s and ☾'s Right Ascension - - - - -			7 8	44·00
			° ′	″
☾'s Declination - - - - - - - - - -		N.	22 18	7·7
☉'s Declination - - - - - - - - - -		N.	22 31	3·0
☾'s Hourly Motion in R. A. - - - - -				34 34·4
☉'s Hourly Motion in R. A. - - - - -				2 33·9
☾'s Hourly Motion in Declination - - -		S.		6 48·8
☉'s Hourly Motion in Declination - - -		S.		16·8
☾'s Equatorial Horizontal Parallax - -				56 43·6
☉'s Equatorial Horizontal Parallax - -				8·4
☾'s True Semidiameter - - - - - -				15 29·6
☉'s True Semidiameter - - - - - -				15 46·0

Begins on the Earth generally, July $7^d\ 11^h\ 17^m{\cdot}8$, Mean Time at Greenwich, in Longitude 100° 6′ E. of Greenwich, and Latitude 3° 54′ N.

Central Eclipse begins generally, July $7^d\ 12^h\ 20^m{\cdot}7$, in Longitude 86° 9′ E. of Greenwich, and Latitude 0° 25′ S.

Central Eclipse at Noon, July $7^d\ 14^h\ 15^m{\cdot}1$, in Longitude 147° 23′ E. of Greenwich, and Latitude 9° 22′ N.

Central Eclipse ends generally, July $7^d\ 15^h\ 58^m{\cdot}6$, in Longitude 158° 46′ W. of Greenwich, and Latitude 23° 26′ S.

Ends on the Earth generally, July $7^d\ 17^h\ 1^m{\cdot}4$, in Longitude 172° 26′ W. of Greenwich, and Latitude 19° 11′ S.

The central and limiting lines of this Eclipse, in the diagram in page 432, have been laid down from the following calculated positions:—

Line of Central Eclipse.

Longitude.	Latitude.	Longitude.	Latitude.	Longitude.	Latitude.
° ′	° ′	° ′	° ′	° ′	° ′
86 9 E.	0 25 S.	127 51 E.	12 37 N.	168 18 E.	4 18 S.
95 32	3 26 N.	135 1	12 36	174 35 E.	8 46
100 47	5 29	142 15	11 14	179 5 W.	12 55
106 26	7 34	149 33	8 19	173 43	16 6
113 24	9 49	156 5	4 29	168 31	18 53
120 38 E.	11 36 N.	162 12 E.	0 11 N.	158 46 W.	23 26 S.

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Northern line of simple contact.

Longitude.	Latitude.	Longitude.	Latitude.	Longitude.	Latitude.
° ′	° ′	° ′	° ′	° ′	° ′
71 45 E.	29 20 N.	128 0 E.	44 40 N.	178 28 W.	25 38 N.
81 2	33 10	139 20	44 14	170 45	20 17
87 52	35 49	149 29	42 23	164 8	16 4
95 11	38 23	158 23	39 25	158 36	12 52
104 36	41 10	166 32	35 26	153 3	10 1
116 30 E.	43 38 N.	174 14 E.	30 40 N.	144 56 W.	6 26 N.

Southern line of simple contact.

Longitude.	Latitude.	Longitude.	Latitude.	Longitude.	Latitude.
° ′	° ′	° ′	° ′	° ′	° ′
93 20 E.	35 26 S.	127 16 E.	25 16 S.	152 57 E.	35 46 S.
100 31	32 22	131 35	25 32	158 4	39 27
106 9	30 7	135 49	26 27	163 47	43 33
111 34	28 12	140 11	28 3	169 22	47 22
117 20	26 33	144 20	30 9	175 26 E.	51 15
122 37 E.	25 34 S.	148 29 E.	32 43 S.	176 24 W.	56 0 S.

Eclipse begins at Sun-set.

Longitude.	Latitude.	Longitude.	Latitude.	Longitude.	Latitude.
° ′	° ′	° ′	° ′	° ′	° ′
176 38 W.	55 52 S.	160 24 W.	48 25 S.	140 43 W.	15 20 S.
172 36	55 13	151 21	38 45	139 8	7 1 S.
167 26	53 3	144 15	25 52	139 8	0 15 N.
163 19 W.	50 35 S.	142 37 W.	21 36 S.	141 12 W.	4 56 N.

Eclipse ends at Sun-rise.

Longitude.	Latitude.	Longitude.	Latitude.	Longitude.	Latitude.
° ′	° ′	° ′	° ′	° ′	° ′
68 11 E.	27 50 N.	70 9 E.	1 28 N.	84 1 E.	29 9 S.
66 33	23 16	71 27	2 54 S.	86 38	31 57
66 56	16 5	76 28	16 16	90 11	34 30
68 32 E.	7 46 N.	82 13 E.	26 43 S.	93 42 E.	35 17 S.

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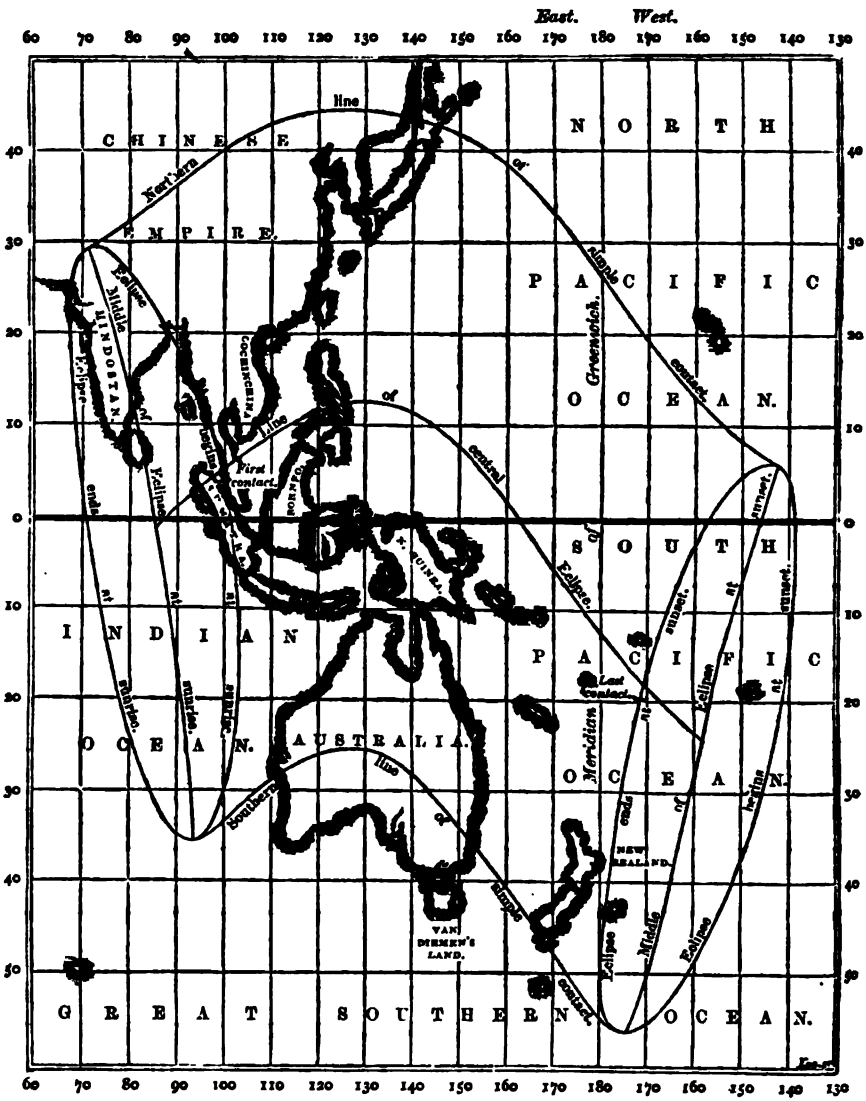
PATH OF THE MOON'S PENUMBRA UPON THE SURFACE OF THE EARTH, DURING THE ANNULAR ECLIPSE OF THE SUN, JULY 7, 1861.


East.
West.
60 70 80 90 100 110 120 130 140 150 160 170 180 170 160 150 140 130
40 30 20 10 0 10 20 30 40 50
CHINESE EMPIRE.
INDIAN OCEAN.
AUSTRALIA.
PACIFIC OCEAN.
NORTH PACIFIC OCEAN.
SOUTH PACIFIC OCEAN.
GREAT SOUTHERN OCEAN.
HINDOSTAN.
COCHINCHINA
BORNEO
NEW GUINEA.
VAN DIEMEN'S LAND.
NEW ZEALAND.
Greenwich.
Northern limit of Penumbra.
Middle Eclipse ends.
Eclipse ends at sunset.
Eclipse ends at sunrise.
Southern limit of Penumbra.
Eclipse begins at sunrise.
Eclipse begins at sunset.
Middle Eclipse begins.
First contact.
Last contact.
Central Eclipse begins.
Central Eclipse ends.
Eclipse begins.
Eclipse ends.
Middle Eclipse.
Eclipse begins at sunset.
Eclipse ends at sunrise.
Eclipse ends at sunset.
Eclipse begins at sunrise.
Last contact.
Central Eclipse.
Middle Eclipse.
Eclipse begins.
Eclipse ends.
Middle Eclipse ends.
Eclipse begins at sunrise.
Eclipse ends at sunset.
Eclipse begins at sunset.
Eclipse ends

III.—*A Partial Eclipse of the MOON, Dec.* 16, 1861, *partly visible at Greenwich.*

ELEMENTS.				
		d	h m s	
Greenwich Mean Time of ☍ in R.A.	Dec.	16	20 11 16·6	
☾'s Right Ascension			5 40 8·48	
			° ′ ″	
☾'s Declination		N.	24 11 24·3	
☉'s Declination		S.	23 22 44·3	
☾'s Hourly Motion in R.A.			33 21·8	
☉'s Hourly Motion in R.A.			2 46·2	
☾'s Hourly Motion in Declination		S.	1 43·6	
☉'s Hourly Motion in Declination		S.	5·2	
☾'s Equatorial Horizontal Parallax			54 44·4	
☉'s Equatorial Horizontal Parallax			8·7	
☾'s True Semidiameter			14 57·0	
☉'s True Semidiameter			16 17·7	

		d	h	m	
First contact with the Penumbra	Dec.	16	17	44·0	Mean Time at Greenwich.
First contact with the Shadow	—	16	19	27·0	
Middle of the Eclipse	—	16	20	18·1	
Last contact with the Shadow	—	16	21	9·2	
Last contact with the Penumbra	—	16	22	52·2	

At these times respectively the Moon will be in the Zenith of the places whose positions are,

Longitude			Latitude	
°	′		°	′
88	10	W. of Greenwich.	24	24 N.
113	2		24	21
125	23		24	20
137	42		24	18
162	34		24	15 N.

Magnitude of the Eclipse (Moon's diameter = 1) 0·185

The first contact with the Shadow occurs at 158° from the Northernmost point of the Moon's limb towards the East.

The last contact at 150° towards the West; in each case, for *direct* image.

At Greenwich, the Moon will set at 20h 10m.

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IV.—*A Total Eclipse of the SUN, December* 30–31, 1861, *visible (as a partial one) at Greenwich.*

ELEMENTS.				
		d	h m s	
Greenwich Mean Time of ☌ in R.A.	Dec.	31	1 58 22·3	
☉'s and ☾'s Right Ascension - - - - -			18 43 19·65	
			° ′ ″	
☾'s Declination - - - - - - - - - -		S.	22 33 24·5	
☉'s Declination - - - - - - - - - -		S.	23 5 1·4	
☾'s Hourly Motion in R.A. - - - - - -			38 55·7	
☉'s Hourly Motion in R.A. - - - - - -			2 45·8	
☾'s Hourly Motion in Declination - - -		N.	6 3·2	
☉'s Hourly Motion in Declination - - -		N.	11·4	
☾'s Equatorial Horizontal Parallax - -			59 56·1	
☉'s Equatorial Horizontal Parallax - -			8·7	
☾'s True Semidiameter - - - - - - -			16 22·1	
☉'s True Semidiameter - - - - - - -			16 18·2	

Begins on the Earth generally, Dec. $30^d\ 23^h\ 14^m\cdot8$, Mean Time at Greenwich, in Longitude 74° 1′ W. of Greenwich, and Latitude 9° 1′ N.

Central Eclipse begins generally, Dec. $31^d\ 0^h\ 18^m\cdot6$, in Longitude 85° 1′ W. of Greenwich, and Latitude 19° 49′ N.

Central Eclipse at Noon, Dec. $31^d\ 1^h\ 58^m\cdot4$, in Longitude 28° 44′ W. of Greenwich, and Latitude 8° 57′ N.

Central Eclipse ends generally, Dec. $31^d\ 3^h\ 18^m\cdot8$, in Longitude 22° 5′ E. of Greenwich, and Latitude 37° 39′ N.

Ends on the Earth generally, Dec. $31^d\ 4^h\ 22^m\cdot6$, in Longitude 12° 38′ E. of Greenwich, and Latitude 27° 13′ N.

The central and limiting lines of this Eclipse, in the diagram in page 436, have been laid down from the following calculated positions :—

Line of Central Eclipse.

Longitude.	Latitude.	Longitude.	Latitude.	Longitude.	Latitude.
° ′	° ′	° ′	° ′	° ′	° ′
85 1 W.	19 49 N.	45 34 W.	6 37 N.	13 1 W.	17 32 N.
77 54	16 45	40 21	6 29	7 43	20 57
69 2	13 6	34 46	7 11	1 55 W.	24 39
62 23	10 37	28 20	9 6	4 48 E.	28 43
56 27	8 44	22 58	11 35	14 10	33 51
50 54 W.	7 24 N.	18 1 W.	14 23 N.	22 5 E.	37 39 N.

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Southern line of simple contact.

Longitude.	Latitude.	Longitude.	Latitude.
° ′	° ′	° ′	° ′
94 30 W.	10 39 S.	21 10 W.	22 34 S.
85 29	14 28	12 56	18 44
79 25	16 54	5 46 W.	14 33
71 59	19 44	1 2 E.	10 13
65 5	22 4	7 2	6 23
57 49	24 5	12 55	2 49 S.
49 22	25 31	19 33	0 56 N.
40 38	26 15	25 12	3 49
31 16 W.	25 25 S.	34 0 E.	7 45 N.

Eclipse begins at sun-set.

Longitude.	Latitude.	Longitude.	Latitude.
° ′	° ′	° ′	° ′
35 57 E.	8 10 N.	38 9 E.	33 30 N.
38 44	10 23	30 45	47 25
40 26	14 59	13 15 E.	60 36
40 34 E.	22 33 N.	13 6 W.	66 38 N.

Eclipse ends at sun-rise.

Longitude.	Latitude.	Longitude.	Latitude.
° ′	° ′	° ′	° ′
92 47 W.	10 23 S.	96 31 W.	30 16 N.
96 28	10 14	88 40	45 53
99 16	8 2	77 18	57 2
101 2	3 24 S.	63 10	63 38
101 32	4 15 N.	49 15	66 27
100 19 W.	15 30 N.	36 3 W.	67 1 N.

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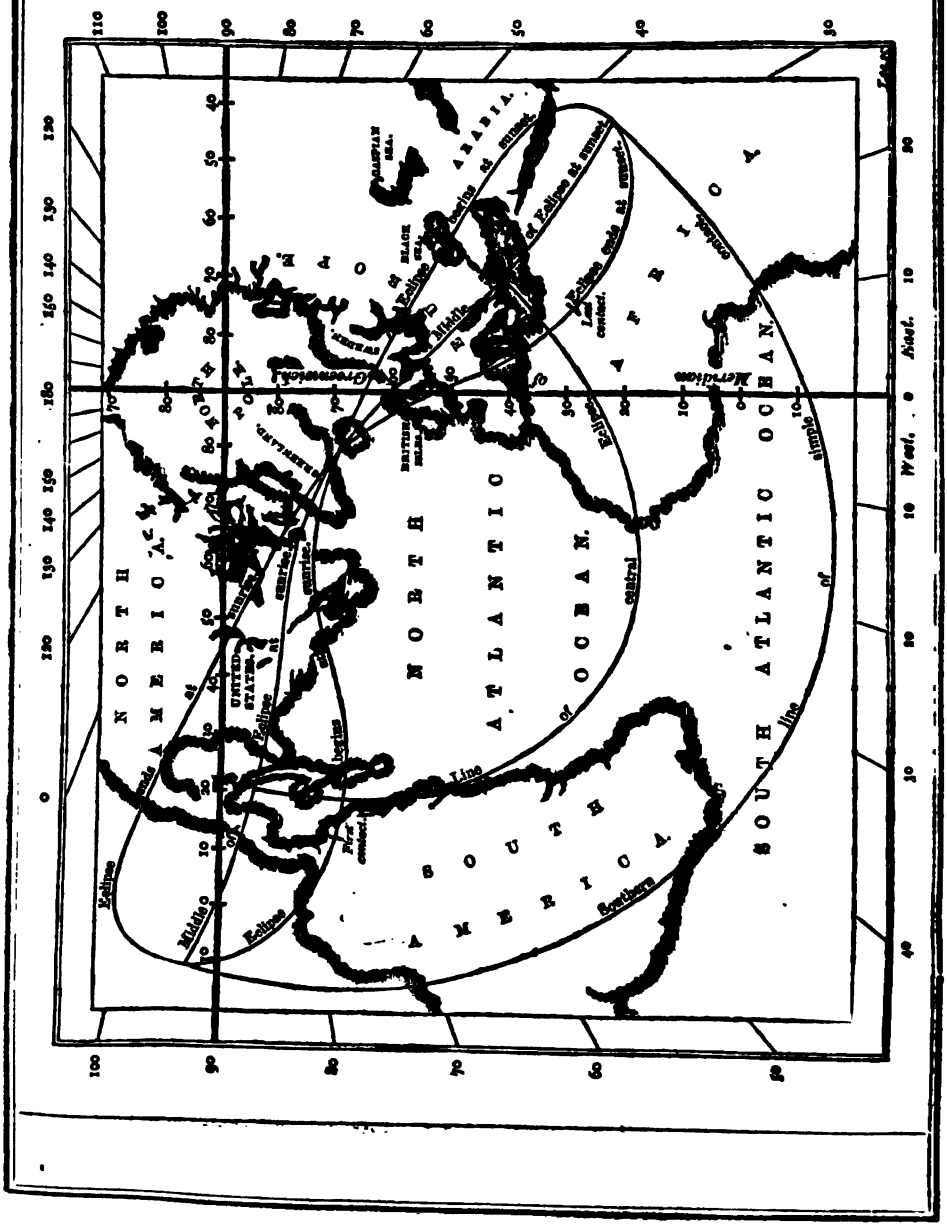
PATH OF THE MOON'S SHADOW AND PENUMBRA UPON THE SURFACE OF THE EARTH, DURING THE TOTAL ECLIPSE OF THE SUN, DECEMBER 30–31, 1861.



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At GREENWICH a partial Eclipse is visible, and

		d	h	m	
Begins - - - -	Dec.	31	1	51·0	Mean Time at Greenwich.
Greatest Phase	—	31	2	53·3	
Ends - - - - -	—	31	3	51·5	

Magnitude of the Eclipse (Sun's diameter = 1) 0·466.

Angle, from North Pole, of { first contact, 140° towards the West; last contact, 104° towards the East } for *direct* image.

Angle, from Vertex, of { first contact, 157° towards the West; last contact, 73° towards the East } for *direct* image.

For any place not far distant from Greenwich, whose Geocentric North latitude is l and East longitude λ, the Mean Greenwich time t of beginning, may be computed by the formulæ,

$$\cos\omega = 0\cdot93456 - [0\cdot20849]\sin l + [9\cdot93335]\cos l\cos(\lambda - 114^\circ\ 5'\cdot3)$$

$$t = 1^h\ 38^m\ 42^s - [3\cdot65667]\sin\omega + [3\cdot34774]\sin l - [3\cdot90254]\cos l\cos(\lambda + 124^\circ\ 6'\cdot0)$$

contact on ⊙'s limb, $\omega + 16^\circ\ 53'\cdot9$ from the North towards the West.

Also the Mean Greenwich time t of ending, by the formulæ,

$$\cos\omega = 0\cdot63851 - [0\cdot20503]\sin l + [9\cdot94255]\cos l\cos(\lambda - 82^\circ\ 21'\cdot2)$$

$$t = 1^h\ 22^m\ 31^s + [3\cdot60219]\sin\omega + [3\cdot32680]\sin l - [3\cdot84431]\cos l\cos(\lambda + 153^\circ\ 39'\cdot1)$$

contact on ⊙'s limb, $\omega - 18^\circ\ 18'\cdot3$ from the North towards the East.

At CAMBRIDGE a partial Eclipse is visible, and

		d	h	m	
Begins - - - -	Dec.	31	1	51·4	Mean Time at Cambridge.
Greatest Phase	—	31	2	53·0	
Ends - - - - -	—	31	3	50·6	

Magnitude of the Eclipse (Sun's diameter = 1) 0·456.

Angle, from North Pole, of { first contact, 141° towards the West; last contact, 105° towards the East } for *direct* image.

Angle, from Vertex, of { first contact, 158° towards the West; last contact, 74° towards the East } for *direct* image.

For any place not far distant from Cambridge, whose Geocentric North latitude is l and East longitude λ, the Mean Greenwich time t of beginning, may be computed by the formulæ,

$$\cos\omega = 0\cdot93520 - [0\cdot20881]\sin l + [9\cdot93193]\cos l\cos(\lambda - 114^\circ\ 22'\cdot9)$$

$$t = 1^h\ 38^m\ 59^s - [3\cdot65436]\sin\omega + [3\cdot34117]\sin l - [3\cdot90050]\cos l\cos(\lambda + 124^\circ\ 1'\cdot7)$$

contact on ⊙'s limb, $\omega + 16^\circ\ 43'\cdot9$ from the North towards the West.

Also the Mean Greenwich time t of ending, by the formulæ,

$$\cos\omega = 0\cdot64454 - [0\cdot20472]\sin l + [9\cdot94346]\cos l\cos(\lambda - 82^\circ\ 51'\cdot0)$$

$$t = 1^h\ 22^m\ 59^s + [3\cdot60109]\sin\omega + [3\cdot32163]\sin l - [3\cdot84355]\cos l\cos(\lambda + 153^\circ\ 39'\cdot0)$$

contact on ⊙'s limb, $\omega - 18^\circ\ 9'\cdot4$ from the North towards the East.

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At OXFORD a partial Eclipse is visible, and

		d	h	m	
Begins - - - -	Dec.	31	1	45·0	Mean Time at Oxford.
Greatest Phase	—	31	2	46·8	
Ends - - - - -	—	31	3	44·8	

Magnitude of the Eclipse (Sun's diameter = 1) 0·449.

Angle, from North Pole, of { first contact, 141° towards the West; last contact, 106° towards the East } for *direct* image.

Angle, from Vertex, of { first contact, 156° towards the West; last contact, 76° towards the East }

For any place not far distant from Oxford, whose Geocentric North latitude is l and East longitude λ, the Mean Greenwich time t of beginning, may be computed by the formulæ,

$$\cos\omega = 0\cdot95104 - [0\cdot20921]\sin l + [9\cdot93083]\cos l\cos(\lambda - 116^\circ\,36'\cdot0)$$

$$t = {}^{h}1\,{}^{m}41\,{}^{s}23 - [3\cdot66080]\sin\omega + [3\cdot34308]\sin l - [3\cdot90675]\cos l\cos(\lambda + 122^\circ\,3'\cdot2)$$

contact on ⊙'s limb, $\omega + 16^\circ\,34'\cdot5$ from the North towards the West.

Also the Mean Greenwich time t of ending, by the formulæ,

$$\cos\omega = 0\cdot66225 - [0\cdot20523]\sin l + [9\cdot94224]\cos l\cos(\lambda - 84^\circ\,38'\cdot3)$$

$$t = {}^{h}1\,{}^{m}21\,{}^{s}39 + [3\cdot60878]\sin\omega + [3\cdot33204]\sin l - [3\cdot85114]\cos l\cos(\lambda + 151^\circ\,28'\cdot4)$$

contact on ⊙'s limb, $\omega - 18^\circ\,14'\cdot6$ from the North towards the East.

At LIVERPOOL a Partial Eclipse is visible, and

		d	h	m	
Begins - - - -	Dec.	31	1	36·7	Mean Time at Liverpool.
Greatest Phase	—	31	2	36·5	
Ends - - - - -	—	31	3	32·8	

Magnitude of the Eclipse (Sun's diameter = 1) 0·410.

Angle, from North Pole, of { first contact, 143° towards the West; last contact, 109° towards the East } for *direct* image.

Angle, from Vertex, of { first contact, 158° towards the West; last contact, 81° towards the East }

For any place not far distant from Liverpool, whose Geocentric North latitude is l and East longitude λ, the Mean Greenwich time t of beginning, may be computed by the formulæ,

$$\cos\omega = 0\cdot93676 - [0\cdot20974]\sin l + [9\cdot92850]\cos l\cos(\lambda - 115^\circ\,9'\cdot3)$$

$$t = {}^{h}1\,{}^{m}39\,{}^{s}29 - [3\cdot65508]\sin\omega + [3\cdot33087]\sin l - [3\cdot90201]\cos l\cos(\lambda + 123^\circ\,51'\cdot2)$$

contact on ⊙'s limb, $\omega + 16^\circ\,18'\cdot1$ from the North towards the West.

Also the Mean Greenwich time t of ending, by the formulæ,

$$\cos\omega = 0\cdot67329 - [0\cdot20592]\sin l + [9\cdot93959]\cos l\cos(\lambda - 85^\circ\,9'\cdot1)$$

$$t = {}^{h}1\,{}^{m}21\,{}^{s}34 + [3\cdot60979]\sin\omega + [3\cdot32598]\sin l - [3\cdot85274]\cos l\cos(\lambda + 151^\circ\,20'\cdot7)$$

contact on ⊙'s limb, $\omega - 17^\circ\,56'\cdot5$ from the North towards the East.

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At DUBLIN a partial Eclipse is visible, and

		d	h	m	
Begins - - - -	Dec.	31	1	20·7	Mean Time at Dublin.
Greatest Phase	—	31	2	19·8	
Ends - - - - -	—	31	3	15·6	

Magnitude of the Eclipse (Sun's diameter=1) 0·380.

Angle, from North Pole, of { first contact, 145° towards the West; last contact, 111° towards the East } for *direct* image.

Angle, from Vertex, of { first contact, 157° towards the West; last contact, 85° towards the East } for *direct* image.

For any place not far distant from Dublin, whose Geocentric North latitude is l and East longitude λ, the Mean Greenwich time t of beginning, may be computed by the formulæ,

$$\cos\omega = 0\cdot94672 - [0\cdot21071]\sin l + [9\cdot92488]\cos l\cos(\lambda - 119^\circ\,41'\cdot6)$$

$$t = 1^h\,41^m\,21^s - [3\cdot66093]\sin\omega + [3\cdot32539]\sin l - [3\cdot90874]\cos l\cos(\lambda + 119^\circ\,56'\cdot4)$$

contact on ⊙'s limb, $\omega + 15^\circ\,52'\cdot2$ from the North towards the West.

Also the Mean Greenwich time t of ending, by the formulæ,

$$\cos\omega = 0\cdot68147 - [0\cdot20613]\sin l + [9\cdot93932]\cos l\cos(\lambda - 88^\circ\,29'\cdot9)$$

$$t = 1^h\,19^m\,30^s + [3\cdot61788]\sin\omega + [3\cdot33311]\sin l - [3\cdot86106]\cos l\cos(\lambda + 148^\circ\,4'\cdot4)$$

contact on ⊙'s limb, $\omega - 17^\circ\,53'\cdot8$ from the North towards the East.

At EDINBURGH a partial Eclipse is visible, and

		d	h	m	
Begins - - - -	Dec.	31	1	35·9	Mean Time at Edinburgh.
Greatest Phase	—	31	2	32·9	
Ends - - - - -	—	31	3	26·9	

Magnitude of the Eclipse (Sun's diameter=1) 0·374.

Angle, from North Pole, of { first contact, 145° towards the West; last contact, 112° towards the East } for *direct* image.

Angle, from Vertex, of { first contact, 158° towards the West; last contact, 86° towards the East } for *direct* image.

For any place not far distant from Edinburgh, whose Geocentric North latitude is l and East longitude λ, the Mean Greenwich time t of beginning, may be computed by the formulæ,

$$\cos\omega = 0\cdot94386 - [0\cdot21077]\sin l + [9\cdot92342]\cos l\cos(\lambda - 116^\circ\,55'\cdot9)$$

$$t = 1^h\,41^m\,11^s - [3\cdot64865]\sin\omega + [3\cdot30892]\sin l - [3\cdot89643]\cos l\cos(\lambda + 122^\circ\,53'\cdot9)$$

contact on ⊙'s limb, $\omega + 15^\circ\,43'\cdot4$ from the North towards the West.

Also the Mean Greenwich time t of ending, by the formulæ,

$$\cos\omega = 0\cdot70407 - [0\cdot20705]\sin l + [9\cdot93487]\cos l\cos(\lambda - 87^\circ\,17'\cdot9)$$

$$t = 1^h\,23^m\,17^s + [3\cdot60824]\sin\omega + [3\cdot31121]\sin l - [3\cdot85217]\cos l\cos(\lambda + 149^\circ\,55'\cdot5)$$

contact on ⊙'s limb, $\omega - 17^\circ\,23'\cdot7$ from the North towards the East.

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A Transit of Mercury over the Sun's disc, November 11, 1861, partly visible at Greenwich.

ELEMENTS.					
		d	h	m	s
Greenwich Mean Time of ☌ in R.A.	Nov.	11	20	5	58·4
☉'s and ☿'s Right Ascension			15	10	3·98
			°	′	″
☿'s Declination	S.		17	32	40·4
☉'s Declination	S.		17	44	43·1
☿'s Hourly Motion in R.A.	W.			3	9·1
☉'s Hourly Motion in R.A.	E.			2	32·7
☿'s Hourly Motion in Declination	N.			1	43·8
☉'s Hourly Motion in Declination	S.			0	40·6
☿'s Equatorial Horizontal Parallax					12·68
☉'s Equatorial Horizontal Parallax					8·67
☿'s True Semidiameter					4·78
☉'s True Semidiameter				16	12·4

With reference to the centre of the Earth,

	d	h	m	s	
Ingress — Nov.	11	17	15	28	Mean Time at Greenwich.
Least distance of centres, 11′0″·7	11	19	16	42	
Egress	11	21	17	51	

Angle, from North Pole, of { first contact, 71° towards the East / last contact, 24° towards the West } for *direct* image.

At times of Ingress and Egress respectively, the Sun will be in the Zenith of the places whose positions are :—

Longitude	°	′		Latitude	°	′	
97	20	E. of Greenwich.		17	49	S.
36	35			17	52	S.

At Greenwich, the Sun will rise at $19^h\ 15^m$.

For any place on the surface of the Earth where the Radius is ρ, and whose Geocentric North Latitude is l and East Longitude λ, the Mean Greenwich time t of Ingress, may be computed by the formula,

$$t = 17^h\ 15^m\ 28^s - [1\cdot2256]\,\rho \sin l - [1\cdot7197]\,\rho \cos l \cos(\lambda + 178^\circ\ 40'\cdot1)$$

also the Mean Greenwich time t of Egress, by the formula,

$$t = 21^h\ 17^m\ 51^s + [1\cdot6817]\,\rho \sin l + [1\cdot4285]\,\rho \cos l \cos(\lambda + 18^\circ\ 21'\cdot9)$$

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Month and Day.	Star's Name.	Magnitude.	Greenwich *Mean Time* of *Apparent* ☌ in R.A. of ☾ and ✱.	At Greenwich Mean Time of ☌			Limiting Parallels.
				Apparent R.A. of ☾ and ✱.	*Apparent* Declination of ✱.	Diff. of *Apparent* Dec. of ☾ and ✱.	
			h m s	h m s	° ′ ″	′ ″ ☾	Latitude. ° °
Jan. 1	p^1 Leonis -	5	17 12 27	11 6 40·52	N. 0 41 2·4	N. 21 45	63 N. 23 S.
2	e Leonis -	5	1 0 19	11 23 14·23	S. 2 14 21·5	N. 76 21	88 N. 36 N.
4	89 Virginis -	5	16 42 50	13 42 20·26	17 26 28·8	N. 72 33	73 N. 35 N.
6	b Scorpii -	5	18 55 43	15 42 37·72	25 19 33·4	N. 73 56	65 N. 49 N.
6	A Scorpii -	5	19 59 25	15 45 16·67	S. 24 54 34·1	N. 42 42	65 N. 0
7	B.A.C. 5347	5	1 44 5	15 59 39·80	S. 25 57 7·0	N. 74 31	64 N. 54 N.
7	σ Scorpii -	3½	6 56 1	16 12 44·83	25 15 22·0	N. 9 28	29 N. 33 S.
7	α Scorpii -	1½	10 9 36	16 20 53·45	26 7 14·2	N. 49 4	64 N. 8 N.
7	22 Scorpii -	5	10 30 27	16 21 46·14	24 48 19·4	S. 31 4	8 S. 79 S.
8	A Ophiuchi	5	4 17 39	17 6 48·22	S. 26 23 41·3	N. 28 23	44 N. 14 S.
8	θ Ophiuchi	3½	6 55 55	17 13 28·46	S. 24 51 26·1	S. 64 45	50 S. 90 S.
13	λ Capricor.	5½	4 29 21	21 39 3·03	12 0 19·6	N. 47 47	78 N. 5 N.
13	θ Aquarii -	4½	20 29 8	22 9 29·93	8 28 26·3	N. 38 24	82 N. 5 S.
14	κ Aquarii -	5	7 50 9	22 30 33·55	S. 4 56 36·5	S. 26 16	16 N. 71 S.
15	κ Piscium -	4½	11 1 34	23 19 48·81	N. 0 29 46·0	N. 3 40	45 N. 38 S.
18	η Piscium -	3½	7 21 2	1 24 3·97	N. 14 37 50·4	S. 5 52	35 N. 42 S.
20	s Arietis -	4½	3 7 50	2 51 17·83	20 47 5·9	N. 41 50	90 N. 12 N.
21	17 Tauri - -	4	0 7 36	3 36 39·67	23 40 35·9	N. 10 18	53 N. 14 S.
21	19 Tauri - -	5	0 16 0	3 36 58·31	24 1 51·8	S. 10 10	31 N. 34 S.
21	20 Tauri - -	5	0 32 47	3 37 35·57	N. 23 56 0·0	S. 2 44	38 N. 26 S.
21	23 Tauri - -	5	0 46 54	3 38 6·92	N. 23 30 55·2	N. 23 39	69 N. 2 S.
21	η Tauri - -	3	1 17 45	3 39 15·55	23 40 30·6	N. 16 55	61 N. 8 S.
21	27 Tauri - -	4	2 2 54	3 40 56·11	23 37 41·6	N. 23 51	70 N. 1 S.
23	5 Geminor.	6	14 11 33	6 3 3·58	24 26 51·4	N. 60 0	90 N. 40 N.
24	ϵ Geminor.	3½	3 22 36	6 35 25·65	N. 25 15 54·6	S. 42 25	0 64 S.
24	B.A.C. 2238	6	6 42 46	6 43 37·05	N. 23 45 45·5	N. 29 57	77 N. 4 N.
24	δ Geminor.	3½	18 15 3	7 11 52·02	22 14 2·9	N. 46 58	90 N. 17 N.
26	o^1 Cancri -	6	11 7 7	8 49 32·33	15 51 3·9	N. 16 1	58 N. 21 S.
27	ϵ Leonis -	3½	6 22 21	9 33 46·67	10 31 11·0	N. 75 47	90 N. 39 N.
27	B.A.C. 3398	6	13 9 31	9 49 6·34	N. 9 35 10·0	N. 33 1	77 N. 11 S.
27	B.A.C. 3407	6	13 54 49	9 50 48·21	N. 8 58 20·0	N. 58 40	90 N. 14 N.
27	π Leonis -	5	14 51 3	9 52 54·50	8 42 22·4	N. 60 43	90 N. 16 N.
28	34 Sextantis	6	9 59 49	10 35 29·16	4 18 16·3	N. 30 46	73 N. 15 S.
29	p^1 Leonis -	5	0 11 49	11 6 41·28	N. 0 40 57·1	N. 22 44	64 N. 22 S.
29	e Leonis -	5	7 45 40	11 23 14·99	S. 2 14 26·9	N. 77 27	88 N. 37 N.
29	B.A.C. 4006	6	17 13 33	11 43 58·34	S. 4 33 52·4	N. 66 35	85 N. 21 N.
30	q Virginis -	6	12 36 32	12 26 38·45	8 41 16·8	N. 14 13	53 N. 29 S.
31	89 Virginis -	5	22 9 2	13 42 21·18	17 26 34·0	N. 74 22	73 N. 38 N.
Feb. 3	A Scorpii -	5	1 30 31	15 45 17·64	24 54 36·9	N. 44 34	65 N. 2 N.
3	σ Scorpii -	3½	12 35 42	16 12 45·73	S. 25 15 24·1	N. 11 16	31 N. 31 S.
3	α Scorpii -	1½	15 52 12	16 20 54·35	S. 26 7 15·9	N. 50 51	64 N. 10 N.
3	22 Scorpii -	5	16 13 23	16 21 47·03	24 48 21·4	S. 29 17	7 S. 76 S.
4	A Ophiuchi	5	10 19 18	17 6 49·05	26 23 42·2	N. 29 59	46 N. 12 S.
4	θ Ophiuchi	3½	13 0 38	17 13 29·26	24 51 27·1	S. 63 10	48 S. 90 S.
5	λ Sagittarii	3	15 57 44	18 19 23·33	S. 25 29 44·0	N. 27 40	48 N. 14 S.

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Month and Day.	Star's Name.	Magnitude.	Greenwich *Mean Time* of *Apparent* ☌ in R.A. of ☾ and ✱.	At Greenwich Mean Time of ☌			Limiting Parallels.
				Apparent R.A. of ☾ and ✱.	*Apparent* Declination of ✱.	Diff. of *Apparent* Dec. of ☾ and ✱.	
			h m s	h m s	° ′ ″	☾ ′ ″	Latitude. ° °
Feb. 7	VENUS -	-	7 59 34	19 51 32·24	S. 21 12 55·0	N. 31 56	62 N. 11 S.
11	κ Piscium -	4½	18 47 16	23 19 48·69	N. 0 29 44·5	S. 0 27	41 N. 42 S.
14	η Piscium -	3½	15 0 30	1 24 3·64	14 37 48·4	S. 12 12	30 N. 48 S.
16	ε Arietis -	4½	11 13 2	2 51 17·43	20 47 4·4	N. 34 59	89 N. 5 N.
17	17 Tauri - -	4	8 35 23	3 36 39·26	N. 23 40 35·0	N. 3 30	45 N. 21 S.
17	19 Tauri - -	5	8 43 57	3 36 57·90	N. 24 1 50·9	S. 16 58	24 N. 41 S.
17	20 Tauri - -	5	9 1 4	3 37 35·16	23 55 59·1	S. 9 32	32 N. 33 S.
17	23 Tauri - -	5	9 15 28	3 38 6·51	23 30 54·3	N. 16 52	61 N. 8 S.
17	η Tauri - -	3	9 46 58	3 39 15·14	23 40 29·7	N. 10 8	53 N. 14 S.
17	27 Tauri - -	4	10 33 2	3 40 55·70	N. 23 37 40·8	N. 17 4	61 N. 8 S.
17	28 Tauri - -	5½	10 33 35	3 40 56·90	N. 23 42 42·6	N. 12 5	55 N. 12 S.
20	ε Geminor.	3½	13 31 25	6 35 25·46	25 15 55·3	S. 47 27	6 S. 65 S.
21	δ Geminor.	3½	4 38 46	7 11 51·92	22 14 3·4	N. 42 39	90 N. 13 N.
21	63 Geminor.	5½	7 50 6	7 19 32·02	21 43 32·9	N. 49 30	90 N. 19 N.
22	d^2 Cancri -	6	7 15 51	8 15 26·97	N. 18 46 26·0	N. 9 6	51 N. 24 S.
23	ξ Leonis -	6	12 50 18	9 24 29·96	N. 11 54 36·8	N. 49 51	90 N. 7 N.
23	ο Leonis -	3½	16 52 27	9 33 46·90	10 31 9·4	N. 75 52	90 N. 39 N.
24	π Leonis -	5	1 13 59	9 52 54·78	8 42 20·4	N. 61 34	90 N. 17 N.
24	B.A.C. 3529	6	10 11 52	10 13 18·62	7 7 29·7	N. 19 5	60 N. 24 S.
25	p^1 Leonis -	5	9 48 56	11 6 41·72	N. 0 40 53·6	N. 26 46	68 N. 19 S.
25	ε Leonis -	5	17 9 8	11 23 15·46	S. 2 14 30·9	N. 82 10	88 N. 44 N.
Mar. 2	A Scorpii -	5	7 20 37	15 45 18·56	24 54 39·9	N. 54 29	65 N. 13 N.
2	σ Scorpii -	3½	18 15 1	16 12 46·66	25 15 26·6	N. 21 8	41 N. 21 S.
2	α Scorpii -	1½	21 28 53	16 20 55·28	26 7 18·2	N. 60 41	64 N. 23 N.
2	22 Scorpii -	5	21 49 47	16 21 47·95	S. 24 48 23·6	S. 19 28	2 N. 63 S.
3	A Ophiuchi	5	15 45 54	17 6 49·97	S. 26 23 43·4	N. 39 30	59 N. 2 S.
3	ℓ Ophiuchi	3½	18 26 25	17 13 30·16	24 51 28·1	S. 53 44	36 S. 90 S.
4	λ Sagittarii	3	21 24 8	18 19 24·92	25 29 43·7	N. 36 15	59 N. 5 S.
5	π^1 Sagittarii	5	8 34 28	18 45 47·78	22 54 44·6	S. 66 47	47 S. 90 S.
5	π^2 Sagittarii	5	8 58 38	18 46 44·14	S. 22 50 27·5	S. 68 54	52 S. 90 S.
7	σ Capricor.	5	2 50 27	20 19 22·49	S. 18 39 51·5	N. 5 40	37 N. 36 S.
7	ρ Capricor.	5	3 35 18	20 20 56·37	18 16 13·3	S. 10 39	22 N. 53 S.
8	λ Capricor.	5½	18 44 21	21 39 3·49	12 0 18·3	N. 48 4	78 N. 6 N.
9	θ Aquarii -	4½	10 53 55	22 9 30·23	S. 8 28 25·8	N. 36 24	81 N. 6 S.
13	η Piscium -	3½	21 38 51	1 24 3·41	N. 14 37 46·4	S. 21 58	20 N. 59 S.
15	μ Arietis -	5½	9 46 15	2 34 32·79	N. 19 25 8·7	N. 39 19	90 N. 8 N.
15	ε Arietis -	4½	17 59 12	2 51 17·04	20 47 2·5	N. 22 43	68 N. 7 S.
16	17 Tauri - -	4	15 35 16	3 36 38·82	23 40 33·4	S. 9 30	32 N. 33 S.
16	19 Tauri - -	5	15 43 57	3 36 57·46	24 1 49·3	S. 29 59	11 N. 56 S.
16	20 Tauri - -	5	16 1 18	3 37 34·72	N. 23 55 57·4	S. 22 33	18 N. 47 S.
16	23 Tauri - -	5	16 15 55	3 38 6·07	N. 23 30 52·7	N. 3 51	46 N. 20 S.
16	η Tauri - -	3	16 47 50	3 39 14·70	23 40 28·1	S. 2 54	38 N. 27 S.
16	27 Tauri - -	4	17 34 34	3 40 55·26	23 37 39·2	N. 4 1	46 N. 20 S.
19	5 Geminor.	6	8 30 17	6 3 2·85	24 26 51·9	N. 41 10	90 N. 20 N.
19	ε Geminor.	3½	22 22 7	6 35 25·02	N. 25 15 55·9	S. 60 25	25 S. 65 S.

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				Apparent R.A. of ☾ and ✱.	*Apparent* Declination of ✱.	Diff. of *Apparent* Dec. of ☾ and ✱.		
						☾	Latitude.	
			h m s	h m s	° ′ ″	′ ″	°	°
Mar. 20	δ Geminor.	3½	13 57 57	7 11 51·52	N. 22 14 4·0	N. 30 16	77 N.	2 N.
21	B.A.C. 2683	6	9 17 6	7 56 45·64	19 13 53·1	N. 51 44	90 N.	18 N.
23	o Leonis -	3½	3 44 31	9 33 46·78	10 31 9·4	N. 68 39	90 N.	28 N.
23	B.A.C. 3398	6	10 31 56	9 49 6·53	9 35 8·0	N. 27 23	69 N.	15 S.
23	B.A.C. 3407	6	11 17 7	9 50 48·41	N. 8 58 17·7	N. 53 12	90 N.	9 N.
23	π Leonis -	5	12 13 8	9 52 54·72	N. 8 42 20·1	N. 55 27	90 N.	11 N.
24	34 Sextantis	6	7 7 17	10 35 29·56	4 18 12·4	N. 30 5	72 N.	15 S.
24	p^2 Leonis -	5	20 56 1	11 6 41·83	N. 0 40 52·0	N. 25 37	66 N.	19 S.
25	e Leonis -	5	4 13 29	11 23 15·62	S. 2 14 32·9	N. 82 13	88 N.	45 N.
25	B.A.C. 4006	6	13 17 21	11 43 59·09	S. 4 33 59·1	N. 73 42	85 N.	29 N.
29	B.A.C. 5197	6	12 25 49	15 37 35·69	S. 24 16 47·6	N. 48 32	66 N.	5 N.
29	A Scorpii -	5	15 23 55	15 45 19·36	24 54 42·7	N. 67 54	65 N.	31 N.
29	B.A.C. 5255	6	15 37 25	15 45 54·56	24 59 50·4	N. 71 41	65 N.	38 N.
29	3 Scorpii -	6	15 47 58	15 46 22·05	24 49 56·7	N. 60 45	65 N.	20 N.
30	σ Scorpii -	3½	1 56 7	16 12 47·53	S. 25 15 28·9	N. 35 6	56 N.	8 S.
30	α Scorpii -	1½	5 3 38	16 20 56·16	S. 26 7 20·4	N. 74 47	64 N.	51 N.
30	22 Scorpii -	5	5 23 51	16 21 48·83	24 48 25·7	S. 5 21	15 N.	47 S.
30	A Ophiuchi	5	22 47 4	17 6 50·87	26 23 44·4	N. 54 11	64 N.	14 N.
31	θ Ophiuchi	3½	1 23 5	17 13 31·08	24 51 29·1	S. 38 59	21 S.	90 S.
Apr. 1	λ Sagittarii	3	3 42 24	18 19 25·84	S. 25 29 43·0	N. 51 14	65 N.	11 N.
1	ν^2 Sagittarii	5	14 40 50	18 45 48·65	S. 22 54 43·4	S. 51 55	26 S.	90 S.
1	ν^3 Sagittarii	5	15 4 38	18 46 45·00	22 50 26·4	S. 54 1	29 S.	90 S.
2	f Sagittarii	5	13 31 58	19 38 16·86	20 5 29·3	S. 65 21	40 S.	90 S.
3	π Capricor.	5	8 33 29	20 19 23·23	18 39 48·9	N. 19 5	51 N.	23 S.
3	ρ Capricor.	5	9 18 12	20 20 57·10	S. 18 16 10·8	N. 2 43	35 N.	39 S.
5	θ Aquarii -	4½	16 43 34	22 9 30·72	S. 8 28 23·2	N. 45 3	82 N.	3 N.
6	κ Aquarii -	5	4 11 45	22 30 34·18	S. 4 56 34·9	S. 22 36	19 N.	66 S.
7	κ Piscium -	4½	7 30 37	23 19 49·09	N. 0 29 45·5	S. 0 7	41 N.	41 S.
11	ε Arietis -	4½	23 53 49	2 51 16·86	20 47 0·9	N. 12 43	55 N.	16 S.
12	17 Tauri - -	4	21 29 43	3 36 38·54	N. 23 40 31·6	S. 21 22	19 N.	46 S.
12	19 Tauri - -	5	21 38 25	3 36 57·17	N. 24 1 47·5	S. 41 52	3 S.	66 S.
12	20 Tauri - -	5	21 55 48	3 37 34·44	23 55 55·7	S. 34 27	5 N.	61 S.
12	23 Tauri - -	5	22 10 26	3 38 5·79	23 30 51·0	S. 8 5	33 N.	32 S.
12	η Tauri - -	3	22 42 25	3 39 14·41	23 40 26·3	S. 14 52	26 N.	39 S.
12	27 Tauri - -	4	23 29 14	3 40 54·97	N. 23 37 37·5	S. 8 1	33 N.	31 S.
14	k Tauri - -	5½	6 44 2	4 49 40·33	N. 24 50 0·6	N. 23 44	70 N.	6 N.
16	δ Geminor.	3½	21 13 1	7 11 51·06	22 14 4·4	N. 13 55	56 N.	13 S.
19	ξ Leonis -	6	8 46 49	9 24 29·49	11 54 38·0	N. 27 34	70 N.	13 S.
19	o Leonis -	3½	13 1 25	9 33 46·46	10 31 10·3	N. 54 26	90 N.	12 N.
19	π Leonis -	5	21 46 56	9 52 54·43	N. 8 42 20·8	N. 42 2	90 N.	1 S.
21	p^2 Leonis -	5	7 25 46	11 6 41·70	N. 0 40 52·0	N. 16 26	57 N.	27 S.
21	e Leonis -	5	14 52 47	11 23 15·52	S. 2 14 33·3	N. 74 13	88 N.	31 N.
26	A Scorpii -	5	1 35 0	15 45 20·00	24 54 44·8	N. 77 31	65 N.	55 N.
26	σ Scorpii -	3½	11 50 6	16 12 48·21	25 15 30·5	N. 15 55	65 N.	3 N.
26	22 Scorpii -	5	15 11 55	16 21 49·53	S. 24 48 27·1	N. 5 50	24 N.	36 S.

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Month and Day.	Star's Name.	Magnitude.	Greenwich *Mean Time* of *Apparent* ☌ in R.A. of ☾ and ✱.	At Greenwich Mean Time of ☌			Limiting Parallels.	
				Apparent R.A. of ☾ and ✱.	*Apparent* Declination of ✱.	Diff. of *Apparent* Dec. of ☾ and ✱.		
						☾	Latitude.	
			h m s	h m s	° ′ ″	′ ″	°	°
Apr. 27	A Ophiuchi	5	8 3 55	17 6 51·69	S. 26 23 45·2	N. 67 1	64 N.	32 N.
27	θ Ophiuchi	3½	10 35 6	17 13 31·86	24 51 29·5	S. 25 56	8 S.	70 S.
27	b Ophiuchi	5	12 15 17	17 17 56·31	24 2 41·9	S. 74 34	63 S.	90 S.
28	4 Sagittarii	5	1 3 53	17 51 21·65	23 48 0·5	S. 71 59	57 S.	90 S.
28	λ Sagittarii	3	12 5 37	18 19 26·72	S. 25 29 42·2	N. 66 7	65 N.	32 N.
28	ν¹ Sagittarii	5	22 44 32	18 45 49·52	S. 22 54 41·9	S. 36 28	10 S.	88 S.
28	ν² Sagittarii	5	23 7 38	18 46 45·87	22 50 24·8	S. 38 34	12 S.	90 S.
29	ο Sagittarii	4	3 6 8	18 56 23·97	21 56 26·9	S. 68 45	47 S.	90 S.
29	f Sagittarii	5	20 58 36	19 38 17·73	20 5 26·6	S. 49 9	18 S.	90 S.
30	π Capricor.	5	15 34 21	20 19 24·08	S. 18 39 45·6	N. 35 28	68 N.	7 S.
30	ρ Capricor.	5	16 18 9	20 20 57·94	S. 18 16 7·5	N. 19 7	51 N.	23 S.
30	σ Capricor.	6	16 46 14	20 21 58·01	19 2 17·0	N. 69 58	71 N.	39 N.
May 2	θ Aquarii -	4½	23 0 5	22 9 31·42	8 28 19·2	N. 59 29	82 N.	20 N.
3	κ Aquarii -	5	10 24 33	22 30 34·85	S. 4 56 31·0	S. 9 1	32 N.	50 S.
4	κ Piscium -	4½	13 39 28	23 19 49·68	N. 0 29 48·8	N. 10 56	52 N.	30 S.
7	η Piscium -	3½	9 47 43	1 24 3·78	N. 14 37 46·3	S. 24 16	17 N.	61 S.
12	Mars - -	-	11 40 57	5 42 36·43	24 28 37·7	N. 33 2	85 N.	14 N.
14	δ Geminor.	3½	2 56 59	7 11 50·70	22 14 4·4	N. 0 48	42 N.	25 S.
15	d² Cancri -	6	8 46 44	8 17 59·43	17 30 0·2	N. 32 35	80 N.	2 S.
16	ο Leonis -	3½	19 59 50	9 33 46·11	N. 10 31 11·4	N. 39 38	89 N.	2 S.
17	π Leonis -	5	5 0 58	9 52 54·09	N. 8 42 22·1	N. 27 26	70 N.	14 S.
17	16 Sextantis	6	9 18 47	10 2 0·02	6 50 53·8	N. 79 28	90 N.	51 N.
18	p¹ Leonis -	6	11 1 17	10 56 32·28	0 44 32·4	N. 71 41	90 N.	30 N.
18	p² Leonis -	5	15 46 14	11 6 41·44	N. 0 40 53·1	N. 3 45	45 N.	38 S.
18	e Leonis -	5	23 28 26	11 23 15·30	S. 2 14 32·6	N. 62 12	88 N.	17 N.
19	B.A.C.4006	6	9 0 49	11 43 58·84	S. 4 33 59·3	N. 56 9	85 N.	10 N.
23	B.A.C.5197	6	9 23 30	15 37 36·69	24 16 51·2	N. 59 46	66 N.	18 N.
23	3 Scorpii -	6	12 40 21	15 46 23·09	24 50 0·3	N. 72 49	65 N.	40 N.
23	σ Scorpii -	3½	22 29 51	16 12 48·69	25 15 31·7	N. 49 34	65 N.	7 N.
24	22 Scorpii -	5	1 50 22	16 21 50·04	S. 24 48 28·2	N. 9 54	28 N.	32 S.
24	A Ophiuchi	5	18 31 56	17 6 52·31	S. 26 23 45·8	N. 73 0	64 N.	44 N.
24	θ Ophiuchi	3½	21 1 2	17 13 32·48	24 51 29·7	S. 19 40	3 S.	62 S.
24	b Ophiuchi	5	22 39 45	17 17 56·94	24 2 42·0	S. 68 7	52 S.	90 S.
25	4 Sagittarii	5	11 15 30	17 51 22·34	23 48 0·0	S. 64 15	44 S.	90 S.
25	λ Sagittarii	3	22 4 6	18 19 27·48	S. 25 29 41·4	N. 74 53	65 N.	53 N.
26	ν¹ Sagittarii	5	8 28 50	18 45 50·34	S. 22 54 40·3	S. 26 49	●	71 S.
26	ν² Sagittarii	5	8 51 24	18 46 46·69	22 50 23·2	S. 28 52	2 S.	74 S.
26	ο Sagittarii	4	12 44 18	18 56 24·77	21 56 25·0	S. 58 45	32 S.	90 S.
27	f Sagittarii	5	6 10 30	19 38 18·59	20 5 23·8	S. 37 55	6 S.	90 S.
28	π Capricor.	5	0 18 10	20 19 24·97	S. 18 39 42·0	N. 47 42	71 N.	5 N.
28	ρ Capricor.	5	1 0 53	20 20 58·84	S. 18 16 3·8	N. 31 23	64 N.	11 S.
30	θ Aquarii -	4½	6 31 56	22 9 32·29	8 28 14·1	N. 72 37	82 N.	42 N.
30	κ Aquarii -	5	17 45 39	22 30 35·68	S. 4 56 26·0	N. 3 55	44 N.	37 S.
31	κ Piscium -	4½	20 41 36	23 19 50·46	N. 0 29 53·7	N. 22 53	66 N.	19 S.
June 3	η Piscium -	3½	16 33 49	1 24 4·43	N. 14 37 49·0	S. 17 4	24 N.	53 S.

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Month and Day.	Star's Name.	Magnitude.	Greenwich *Mean Time* of *Apparent* ☌ in R.A. of ☾ and ✱.	At Greenwich Mean Time of ☌			Limiting Parallels.
				Apparent R.A. of ☾ and ✱.	*Apparent* Declination of ✱.	Diff. of *Apparent* Dec. of ☾ and ✱.	
			h m s	h m s	° ′ ″	☾ ′ ″	Latitude. ° °
June 5	ε Arietis -	4½	12 32 16	2 51 17·51	N.20 47 1·3	N.13 27	56 N. 15 S.
10	δ Geminor.	3½	8 39 13	7 11 50·60	22 14 4·0	S. 4 59	36 N. 31 S.
11	ζ Cancri -	5½	8 3 8	8 4 15·80	18 3 46·6	N.52 43	90 N. 20 N.
13	o Leonis -	3½	1 32 49	9 33 45·84	10 31 12·6	N.30 46	75 N. 10 S.
13	π Leonis -	5	10 38 21	9 52 53·82	N. 8 42 23·5	N.18 22	59 N. 22 S.
14	36 Sextantis	6	8 13 49	10 38 1·69	N. 3 12 51·1	N.43 40	90 N. 1 S.
14	p^2 Leonis -	5	21 56 0	11 .6 41·17	N. 0 40 54·6	S. 5 22	36 N. 46 S.
15	e Leonis -	5	5 48 32	11 23 15·02	S. 2 14 31·1	N.53 15	88 N. 8 N.
17	69 Virginis -	5½	11 2 53	13 20 5·57	15 15 28·4	N.73 40	75 N. 35 N.
20	σ Scorpii -	3½	8 7 0	16 12 48·92	S.25 15 32·5	N.48 12	65 N. 6 N.
20	22 Scorpii -	5	11 30 59	16 21 50·29	S.24 48 28·8	N. 8 47	27 N. 33 S.
21	A Ophiuchi	5	4 26 2	17 6 52·69	26 23 46·4	N.73 7	64 N. 46 N.
21	θ Ophiuchi	3½	6 56 35	17 13 32·88	24 51 30·0	S.19 24	3 S. 62 S.
21	b Ophiuchi	5	8 36 12	17 17 57·34	24 2 42·1	S.67 44	52 S. 90 S.
21	4 Sagittarii	5	21 16 35	17 51 22·81	S.23 47 59·7	S.63 0	42 S. 90 S.
22	ν^1 Sagittarii	5	18 29 32	18 45 50·93	S.22 54 39·2	S.24 14	2 N. 68 S.
22	ν^2 Sagittarii	5	18 52 0	18 46 47·29	22 50 22·1	S.26 16	0 70 S.
22	o Sagittarii	4	22 43 45	18 56 25·38	21 56 23·7	S.55 55	28 S. 90 S.
23	f Sagittarii	5	16 1 11	19 38 19·28	20 5 21·6	S.34 9	2 S. 82 S.
24	π Capricor.	5	9 54 37	20 19 25·72	S.18 39 39·1	N.52 18	71 N. 10 N.
24	ρ Capricor.	5	10 36 41	20 20 59·57	S.18 16 0·8	N.36 1	68 N. 7 S.
25	18 Aquarii -	6	12 36 16	21 16 39·42	13 28 0·5	N.44 8	69 N. 1 N.
27	κ Aquarii -	5	2 12 22	22 30 36·56	S. 4 56 20·4	N.10 5	51 N. 31 S.
28	κ Piscium -	4½	4 43 17	23 19 51·35	N. 0 29 59·5	N.29 1	74 N. 13 S.
28	19 Piscium -	6	15 22 54	23 39 20·42	N. 2 43 16·7	N.32 32	79 N. 10 S.
29	45 Piscium -	6	12 53 14	0 18 34·58	N. 6 55 36·2	N.48 11	90 N. 8 N.
July 1	η Piscium -	3½	0 6 19	1 24 5·30	14 37 53·6	S.12 22	29 N. 48 S.
2	ε Arietis -	4½	20 6 14	2 51 18·27	20 47 3·9	N.16 41	60 N. 12 S.
3	17 Tauri - -	4	17 30 9	3 36 39·69	23 40 32·2	S.22 26	18 N. 47 S.
3	19 Tauri - -	5	17 38 45	3 36 58·32	N.24 1 47·9	S.42 57	4 S. 66 S.
3	20 Tauri - -	5	17 55 56	3 37 35·58	N.23 55 56·1	S.35 36	4 N. 62 S.
3	23 Tauri - -	5	18 10 23	3 38 6·92	23 30 51·6	S. 9 18	31 N. 32 S.
3	η Tauri - -	3	18 42 0	3 39 15·53	23 40 26·8	S.16 12	24 N. 40 S.
3	27 Tauri - -	4	19 28 17	3 40 56·08	23 37 38·0	S. 9 32	31 N. 32 S.
10	o Leonis -	3½	7 25 51	9 33 45·73	N.10 31 13 5	N.29 25	73 N. 11 S.
10	π Leonis -	5	16 23 32	9 52 53·68	N. 8 42 24·5	N.16 56	58 N. 24 S.
12	p^2 Leonis -	5	3 21 8	11 6 40·94	N. 0 40 56·2	S. 6 54	35 N. 47 S.
12	e Leonis -	5	11 12 12	11 23 14·79	S. 2 14 29·3	N.51 44	88 N. 6 N.
17	σ Scorpii -	3½	15 37 18	16 12 48·87	25 15 32·9	N.47 47	65 N. 6 N.
17	22 Scorpii -	5	19 6 49	16 21 50·26	S.24 48 29·2	N. 8 23	27 N. 33 S.
18	A Ophiuchi	5	12 28 14	17 6 52·75	S.26 23 47·0	N.72 50	64 N. 48 N.
18	θ Ophiuchi	3½	15 2 28	17 13 32·96	24 51 30·5	S.19 40	3 S. 62 S.
18	b Ophiuchi	5	16 44 28	17 17 57·43	24 2 42·3	S.68 1	53 S. 90 S.
19	4 Sagittarii	5	5 41 57	17 51 22·98	23 47 59·8	S.63 15	44 S. 90 S.
20	ν^1 Sagittarii	5	3 17 46	18 45 51·24	S.22 54 38·9	S.24 28	2 N. 68 S.

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				Apparent R.A. of ☾ and ✱.	*Apparent* Declination of ✱.	Diff. of *Apparent* Dec. of ☾ and ✱.	
			h m s	h m s	° ′ ″	′ ″	Latitude. ° °
July 20	ν^2 Sagittarii	5	3 40 34	18 46 47·59	S. 22 50 21·8	S. 26 31	0 71 S.
20	σ Sagittarii	4	7 35 34	18 56 25·71	21 56 23·1	S. 56 11	29 S. 90 S.
20	B.A.C. 6607	6	14 9 18	19 12 22·73	22 39 24·7	N. 32 13	58 N. 10 S.
21	f Sagittarii	5	1 3 59	19 38 19·71	20 5 20·4	S. 34 29	3 S. 83 S.
21	π Capricor.	5	19 2 34	20 19 26·22	S. 18 39 37·3	N. 51 49	71 N. 10 N.
21	ρ Capricor.	5	19 44 42	20 21 0·08	S. 18 15 59·0	N. 35 31	68 N. 7 S.
23	B.A.C. 7620	6	12 13 43	21 46 14·52	10 57 28·4	N. 74 23	79 N. 44 N.
24	θ Aquarii	4½	0 2 53	22 9 33·83	8 28 4·8	N. 77 29	82 N. 56 N.
24	κ Aquarii	5	10 57 35	22 30 37·26	S. 4 56 15·8	N. 8 42	49 N. 33 S.
25	κ Piscium	4½	13 10 9	23 19 52·12	N. 0 30 4·7	N. 27 12	71 N. 15 S.
25	9 Piscium	6	13 20 28	23 20 11·23	N. 0 21 56·3	N. 37 35	88 N. 5 S.
27	58 Piscium	5	8 29 22	0 39 49·90	11 13 15·8	S. 73 53	51 S. 79 S.
28	η Piscium	3½	8 2 56	1 24 6·17	14 37 58·6	S. 15 0	26 N. 51 S.
30	ϵ Arietis	4½	4 8 42	2 51 19·19	20 47 7·7	N. 13 57	56 N. 14 S.
31	17 Tauri	4	1 41 19	3 36 40·59	N. 23 40 34·9	S. 25 3	15 N. 50 S.
31	19 Tauri	5	1 49 58	3 36 59·22	N. 24 1 50·6	S. 45 34	7 S. 66 S.
31	20 Tauri	5	2 7 18	3 37 36·48	23 55 58·8	S. 38 13	1 N. 65 S.
31	23 Tauri	5	2 21 51	3 38 7·82	23 30 54·3	S. 11 55	29 N. 35 S.
31	η Tauri	3	2 53 42	3 39 16·43	23 40 29·5	S. 18 49	22 N. 42 S.
31	27 Tauri	4	3 40 20	3 40 56·98	N. 23 37 40·6	S. 12 8	28 N. 35 S.
Aug. 1	103 Tauri	6	15 5 1	4 59 41·22	N. 24 4 46·2	N. 62 52	90 N. 51 N.
4	δ Geminor.	3½	0 7 41	7 11 51·29	22 14 2·8	S. 5 58	35 N. 32 S.
8	p^1 Leonis	5	9 54 36	11 6 40·82	N. 0 40 57·6	S. 2 38	39 N. 43 S.
8	ϵ Leonis	5	17 34 31	11 23 14·64	S. 2 14 27·7	N. 56 21	88 N. 11 N.
13	B.A.C. 5197	6	7 22 58	15 37 36·37	S. 24 16 51·5	N. 62 49	66 N. 25 N.
13	σ Scorpii	3½	21 18 26	16 12 48·57	S. 25 15 32·7	N. 53 25	65 N. 13 N.
14	22 Scorpii	5	0 51 18	16 21 49·95	24 48 29·0	N. 13 56	32 N. 27 S.
14	θ Ophinchi	3½	21 9 13	17 13 32·74	24 51 30·6	S. 14 47	1 N. 57 S.
14	b Ophiuchi	5	22 53 19	17 17 57·22	24 2 42·5	S. 63 11	47 S. 90 S.
15	c^2 Ophiuchi	5	0 52 50	17 23 0·56	S. 23 51 10·2	S. 73 39	64 S. 90 S.
15	4 Sagittarii	5	12 7 18	17 51 22·83	S. 23 48 0·1	S. 58 56	39 S. 90 S.
16	ν^2 Sagittarii	5	10 11 24	18 45 51·19	22 54 39·2	S. 21 12	4 N. 64 S.
16	ν^3 Sagittarii	5	10 34 42	18 46 47·55	22 50 22·1	S. 23 16	2 N. 67 S.
16	σ Sagittarii	4	14 34 42	18 56 25·69	21 56 23·3	S. 53 9	26 S. 90 S.
17	f Sagittarii	5	8 24 6	19 38 19·77	S. 20 5 20·3	S. 32 28	1 S. 80 S.
18	π Capricor.	5	2 41 0	20 19 26·39	S. 18 39 36·8	N. 52 40	71 N. 12 N.
18	ρ Capricor.	5	3 23 46	20 21 0·25	18 15 58·4	N. 36 19	69 N. 6 S.
20	θ Aquarii	4½	8 8 22	22 9 34·22	8 28 2·2	N. 74 22	82 N. 45 N.
20	κ Aquarii	5	19 3 37	22 30 37·70	S. 4 56 12·7	N. 4 45	45 N. 36 S.
21	κ Piscium	4½	21 12 19	23 19 52·65	N. 0 30 8·6	N. 21 22	64 N. 21 S.
24	η Piscium	3½	15 46 34	1 24 6·92	N. 14 38 3·6	S. 24 14	17 N. 61 S.
26	47 Arietis	6	11 24 31	2 50 12·23	20 6 47·8	N. 40 19	90 N. 12 N.
26	ϵ Arietis	4½	11 57 40	2 51 20·05	20 47 11·7	N. 3 55	45 N. 24 S.
27	17 Tauri	4	9 41 41	3 36 41·48	23 40 38·0	S. 35 3	4 N. 62 S.
27	19 Tauri	5	9 50 26	3 37 0·12	N. 24 1 53·7	S. 55 35	21 S. 66 S.

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				Apparent R.A. of ☾ and ✱.	*Apparent* Declination of ✱.	Diff. of *Apparent* Dec. of ☾ and ✱.		
			h m s	h m s	° ′ ″	′ ″	☾ Latitude. °	°
Aug. 27	20 Tauri - -	5	10 7 57	3 37 37·38	N. 23 56 1·9	S. 48 14	11 S.	66 S.
27	23 Tauri - -	5	10 22 40	3 38 8·71	23 30 57·4	S. 21 55	18 N.	46 S.
27	η Tauri - -	3	10 54 54	3 39 17·33	23 40 32·5	S. 28 49	11 N.	54 S.
27	27 Tauri - -	4	11 42 3	3 40 57·87	23 37 43·6	S. 22 8	18 N.	46 S.
27	33 Tauri - -	6	15 24 12	3 48 53·35	N. 22 46 21·1	N. 46 37	90 N.	24 N.
29	121 Tauri - -	6	11 42 54	5 27 1·24	N. 23 56 41·7	N. 60 51	90 N.	48 N.
31	δ Geminor.	3½	9 31 31	7 11 51·94	N. 22 14 2·0	S. 12 50	28 N.	38 S.
Sept. 10	σ Scorpii -	3½	2 48 30	16 12 48·11	S. 25 15 31·7	N. 65 39	65 N.	30 N.
10	ρ Ophiuchi	5	4 33 55	16 17 18·75	23 7 31·4	S. 68 50	50 S.	90 S.
10	22 Scorpii -	5	6 19 23	16 21 49·50	S. 24 48 28·1	N. 26 8	45 N.	16 S.
11	θ Ophiuchi	3½	2 31 19	17 13 32·30	S. 24 51 30·3	S. 2 52	12 N.	44 S.
11	b Ophiuchi	5	4 15 19	17 17 56·77	24 2 42·2	S. 51 19	33 S.	90 S.
11	c^2 Ophiuchi	5	6 14 49	17 23 0·13	23 51 10·0	S. 61 50	45 S.	90 S.
11	4 Sagittarii	5	17 30 38	17 51 22·42	23 48 0·1	S. 47 27	26 S.	90 S.
12	ν^1 Sagittarii	5	15 44 4	18 45 50·86	S. 22 54 39·7	S. 10 42	14 N.	52 S.
12	ν^2 Sagittarii	5	16 7 35	18 46 47·21	S. 22 50 22·5	S. 12 47	12 N.	54 S.
12	ι Sagittarii	4	20 10 6	18 56 25·37	21 56 23·7	S. 42 53	15 S.	90 S.
12	π Sagittarii	3	22 20 28	19 1 33·99	21 14 21·5	S. 71 13	53 S.	90 S.
13	f Sagittarii	5	14 12 46	19 38 19·52	20 5 20·8	S. 23 22	7 N.	67 S.
14	π Capricor.	5	8 45 32	20 19 26·21	S. 18 39 37·4	N. 60 18	71 N.	22 N.
14	ρ Capricor.	5	9 28 57	20 21 0·08	S. 18 15 58·9	N. 43 53	72 N.	2 N.
14	π^1 Capricor.	5	14 24 23	20 31 34·23	15 26 8·2	S. 75 42	61 S.	90 S.
15	18 Aquarii -	6	12 6 50	21 16 40·27	13 27 55·8	N. 47 12	77 N.	5 N.
16	θ Aquarii -	4½	14 56 6	22 9 34·29	8 28 1·4	N. 76 17	82 N.	54 N.
17	κ Aquarii -	5	1 57 30	22 30 37·83	S. 4 56 11·2	N. 5 20	45 N.	36 S.
18	κ Piscium -	4½	4 15 43	23 19 52·90	N. 0 30 11·1	N. 18 42	60 N.	23 S.
18	16 Piscium -	6	9 22 59	23 29 22·33	1 20 22·1	N. 34 17	82 N.	8 S.
18	19 Piscium -	6	14 47 6	23 39 22·09	2 43 29·2	N. 20 6	62 N.	21 S.
19	45 Piscium -	6	11 59 1	0 18 36·45	6 55 49·8	N. 31 46	78 N.	9 S.
20	η Piscium -	3½	22 49 28	1 24 7·47	N. 14 38 7·4	S. 34 5	7 N.	72 S.
22	ε Arietis -	4½	19 1 3	2 51 20·78	N. 20 47 15·1	S. 9 2	31 N.	37 S.
23	ζ Arietis -	4½	2 38 20	3 6 59·54	20 31 56·1	N. 58 3	90 N.	35 N.
23	17 Tauri - -	4	16 52 17	3 36 42·29	23 40 40·9	S. 48 59	13 S.	66 S.
23	19 Tauri - -	5	17 1 7	3 37 0·93	24 1 56·6	S. 69 30	57 S.	66 S.
23	20 Tauri - -	5	17 18 46	3 37 38·19	N. 23 56 4·8	S. 62 10	33 S.	66 S.
23	23 Tauri - -	5	17 33 36	3 38 9·52	N. 23 31 0·3	S. 35 52	3 N.	64 S.
23	η Tauri - -	3	18 6 5	3 39 18·14	23 40 35·4	S. 42 47	5 S.	66 S.
23	27 Tauri - -	4	18 53 38	3 40 58·69	23 37 46·5	S. 36 8	3 N.	64 S.
26	1 Geminor.	5	8 27 37	5 55 44·31	23 16 3·4	N. 65 45	90 N.	54 N.
27	δ Geminor.	3½	18 28 58	7 11 52·74	N. 22 14 0·6	S. 26 54	14 N.	53 S.
30	ι Leonis -	3½	10 50 55	9 35 46·62	N. 10 31 11·1	N. 21 17	62 N.	18 S.
30	π Leonis -	5	19 36 41	9 52 54·41	N. 8 42 22·6	N. 11 24	51 N.	28 S.
Oct. 7	δ Scorpii -	2½	2 19 4	15 52 10·01	S. 22 13 32·8	S. 66 37	43 S.	90 S.
7	ρ Ophiuchi	5	12 48 50	16 17 18·34	23 7 30·1	S. 54 38	30 S.	90 S.
7	22 Scorpii -	5	13 31 4	16 21 49·08	S. 24 48 26·7	N. 40 26	62 N.	2 S.

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Month and Day.	Star's Name.	Magnitude.	Greenwich *Mean Time* of *Apparent* ☌ in R.A. of ☾ and ✱.	At Greenwich Mean Time of ☌			Limiting Parallels.
				Apparent R.A. of ☾ and ✱.	*Apparent* Declination of ✱.	Diff. of *Apparent* Dec. of ☾ and ✱.	
			h m s	h m s	° ′ ″	′ ″	Latitude. ° °
Oct. 8	θ Ophiuchi	3½	9 9 3	17 13 31·83	S. 24 51 29·5	N. 12 21	26 N. 29 S.
8	*b* Ophiuchi	5	10 50 25	17 17 56·30	24 2 41·4	S. 36 2	17 S. 86 S.
8	c^2 Ophiuchi	5	12 46 57	17 22 59·66	23 51 9·3	S. 46 30	27 S. 90 S.
8	4 Sagittarii	5	23 47 22	17 51 21·94	23 47 59·7	S. 31 51	10 S. 78 S.
9	ν^1 Sagittarii	5	21 37 28	18 45 50·37	S. 22 54 39·9	N. 5 5	28 N. 36 S.
9	ν^2 Sagittarii	5	22 0 40	18 46 46·73	S. 22 50 22·8	N. 3 0	26 N. 38 S.
10	ο Sagittarii	4	2 0 2	18 56 24·88	21 56 24·1	S. 27 9	0 71 S.
10	π Sagittarii	3	4 8 52	19 1 33·51	21 14 21·8	S. 55 31	28 S. 90 S.
10	B.A.C. 6607	6	8 42 2	19 12 21·97	22 39 26·2	N. 60 24	67 N. 23 N.
10	*f* Sagittarii	5	19 52 41	19 38 19·08	S. 20 5 21·5	S. 7 59	21 N. 49 S.
11	π Capricor.	5	14 21 30	20 19 25·82	S. 18 39 38·3	N. 74 54	71 N. 53 N.
11	ρ Capricor.	5	15 4 53	20 20 59·70	18 15 59·8	N. 58 27	72 N. 20 N.
11	τ^2 Capricor.	5	20 0 17	20 31 33·86	15 26 8·9	S. 61 25	29 S. 90 S.
14	κ Aquarii -	5	7 53 17	22 30 37·68	S. 4 56 11·3	N. 14 5	54 N. 27 S.
15	κ Piscium -	4½	10 23 44	23 19 52·86	N. 0 30 11·6	N. 24 3	67 N. 17 S.
15	9 Piscium -	6	10 34 7	23 20 11·98	N. 0 22 3·3	N. 34 23	82 N. 7 S.
18	η Piscium -	3½	5 11 21	1 24 7·77	14 38 10·0	S. 37 52	2 N. 75 S.
20	ε Arietis -	4½	1 19 47	2 51 21·33	20 47 17·8	S. 17 55	22 N. 46 S.
20	ζ Arietis -	4½	8 56 35	3 7 0·10	20 31 58·4	N. 48 25	90 N. 23 N.
20	τ^1 Arietis -	5	11 58 46	3 13 17·51	N. 20 38 57·2	N. 60 16	90 N. 40 N.
20	17 Tauri - -	4	23 10 28	3 36 42·94	N. 23 40 43·2	S. 59 55	30 S. 66 S.
20	23 Tauri - -	5	23 51 49	3 38 10·18	23 31 2·5	S. 46 52	10 S. 66 S.
21	η Tauri - -	3	0 24 19	3 39 18·79	23 40 37·5	S. 53 50	20 S. 66 S.
21	27 Tauri - -	4	1 11 55	3 40 59·35	23 37 48·7	S. 47 14	11 S. 66 S.
22	103 Tauri - -	6	13 43 33	4 59 43·80	N. 24 4 49·6	N. 24 51	71 N. 9 N.
23	1 Geminor.	5	15 12 40	5 55 45·16	N. 23 16 2·9	N. 50 36	90 N. 32 N.
23	3 Geminor.	6	17 45 47	6 1 22·45	23 7 56·4	N. 52 6	90 N. 34 N.
23	μ Geminor.	3	23 47 1	6 14 37·84	22 34 51·6	N. 66 31	90 N. 55 N.
24	*d* Geminor.	6	12 49 53	6 43 17·87	21 55 15·5	N. 50 52	90 N. 28 N.
25	δ Geminor.	3½	1 54 52	7 11 53·64	N. 22 13 58·4	S. 43 8	4 S. 68 S.
27	ο Leonis -	3½	20 13 36	9 33 47·33	N. 10 31 7·5	N. 6 32	47 N. 31 S.
28	κ Leonis -	5	5 16 3	9 52 55·12	8 42 18·9	S. 2 41	38 N. 41 S.
29	p^2 Leonis -	5	15 45 50	11 6 41·69	N. 0 40 54·3	S. 11 45	30 N. 51 S.
29	*e* Leonis -	5	23 20 50	11 23 15·38	S. 2 14 29·7	N. 50 28	88 N. 5 N.
Nov. 3	22 Scorpii -	5	23 19 17	16 21 48·89	S. 24 48 25·2	N. 50 7	65 N. 8 N.
4	θ Ophiuchi	3½	18 19 22	17 13 31·53	S. 24 51 28·3	N. 24 3	38 N. 18 S.
4	*b* Ophiuchi	5	19 57 22	17 17 56·00	24 2 40·4	S. 24 11	6 S. 66 S.
4	c^2 Ophiuchi	5	21 50 1	17 22 59·35	23 51 8·3	S. 34 28	15 S. 82 S.
5	4 Sagittarii	5	8 28 18	17 51 21·57	23 47 59·0	S. 18 54	2 N. 60 S.
6	ν^1 Sagittarii	5	5 35 33	18 45 49·95	S. 22 54 39·7	N. 19 28	42 N. 22 S.
6	ν^2 Sagittarii	5	5 58 1	18 46 46·30	S. 22 50 22·6	N. 17 24	40 N. 24 S.
6	B.A.C. 6448	6	6 19 11	18 47 39·31	23 20 40·9	N. 49 49	67 N. 9 N.
6	ξ^2 Sagittarii	4	7 3 12	18 49 29·43	21 17 4·6	S. 69 21	47 S. 90 S.
6	ο Sagittarii	4	9 49 56	18 56 24·46	21 56 24·0	S. 12 31	13 N. 53 S.
6	π Sagittarii	3	11 54 49	19 1 33·09	S. 21 14 21·9	S. 40 47	12 S. 90 S.

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Month and Day.	Star's Name.	Magnitude.	Greenwich *Mean Time* of *Apparent* ♂ in R.A. of ☾ and ✱.	At Greenwich Mean Time of ♂			Limiting Parallels.
				Apparent R.A. of ☾ and ✱.	*Apparent* Declination of ✱.	Diff. of *Apparent* Dec. of ☾ and ✱.	
			h m s	h m s	° ′ ″	′ ″	Latitude. ° °
Nov. 7	*f* Sagittarii	5	3 11 20	19 38 18·63	S. 20 5 22·0	N. 7 22	35 N. 33 S.
7	*ρ* Capricor.	5	21 55 1	20 20 59·26	18 16 0·7	N. 74 10	72 N. 47 N.
8	τ^2 Capricor.	5	2 44 5	20 31 33·42	15 26 9·9	S. 45 42	10 S. 90 S.
10	*κ* Aquarii -	5	13 53 44	22 30 37·37	S. 4 56 12·4	N. 27 41	70 N. 14 S.
11	*κ* Piscium -	4½	16 21 49	23 19 52·65	N. 0 30 10·9	N. 35 26	84 N. 6 S.
14	*η* Piscium -	3½	11 18 54	1 24 7·83	N. 14 38 11·0	S. 33 53	6 N. 72 S.
14	101 Piscium -	6	13 33 40	1 28 25·70	13 57 29·6	N. 29 36	76 N. 6 S.
16	*ε* Arietis -	4½	7 26 30	2 51 21·64	20 47 19·3	S. 18 58	21 N. 47 S.
16	*ζ* Arietis -	4½	15 2 5	3 7 0·45	20 31 59·7	N. 46 34	90 N. 21 N.
16	τ^1 Arietis -	5	18 3 43	3 13 17·88	N. 20 38 58·4	N. 58 6	90 N. 37 N.
17	17 Tauri - -	4	5 13 0	3 36 43·40	N. 23 40 44·8	S. 63 15	36 S. 66 S.
17	23 Tauri - -	5	5 54 12	3 38 10·64	23 31 4·0	S. 50 16	15 S. 66 S.
17	*η* Tauri - -	3	6 26 34	3 39 19·26	23 40 39·1	S. 57 17	25 S. 66 S.
17	27 Tauri - -	4	7 13 59	3 40 59·82	23 37 50·2	S. 50 47	16 S. 66 S.
17	33 Tauri - -	6	10 57 28	3 48 55·33	N. 22 46 27·0	N. 17 10	60 N. 6 S.
19	121 Tauri - -	6	8 1 39	5 27 3·65	N. 23 56 42·5	N. 23 33	69 N. 7 N.
19	1 Geminor.	5	21 2 59	5 55 45·92	23 16 2·3	N. 41 42	90 N. 22 N.
20	*μ* Geminor.	3	5 37 45	6 14 38·65	22 34 50·5	N. 57 0	90 N. 39 N.
20	*d* Geminor.	6	18 43 5	6 43 18·70	21 55 13·8	N. 40 30	90 N. 16 N.
21	*δ* Geminor.	3½	7 53 12	7 11 54·51	N. 22 13 56·3	S. 54 18	18 S. 68 S.
21	56 Geminor.	5½	8 46 40	7 13 49·99	N. 20 42 2·8	N. 31 46	80 N. 4 N.
24	*o* Leonis -	3½	3 27 38	9 33 48·22	10 31 2·6	S. 6 33	34 N. 44 S.
24	*π* Leonis - -	5	12 46 42	9 52 55·97	8 42 14·1	S. 15 40	26 N. 54 S.
24	16 Sextantis	6	17 12 38	10 2 1·78	6 50 46·9	N. 38 0	86 N. 4 S.
25	55 Leonis -	6	15 48 15	10 48 37·08	N. 1 28 20·1	N. 52 2	90 N. 8 N.
26	p^1 Leonis - -	5	0 28 36	11 6 42·50	N. 0 40 49·4	S. 23 22	19 N. 64 S.
26	*e* Leonis -	5	8 20 20	11 23 16·17	S. 2 14 34·3	N. 39 20	86 N. 5 S.
26	B.A.C. 4006	6	18 2 54	11 43 59·50	4 33 59·6	N. 38 52	83 N. 5 S.
Dec. 3	ν^1 Sagittarii	5	15 54 4	18 45 49·79	22 54 39·2	N. 26 36	49 N. 15 S.
3	ν^2 Sagittarii	5	16 15 54	18 46 46·14	S. 22 50 22·1	N. 24 34	47 N. 17 S.
3	ξ^2 Sagittarii	4	17 19 15	18 49 29·27	S. 21 17 4·3	S. 62 5	35 S. 90 S.
3	*o* Sagittarii	4	20 1 16	18 56 24·28	21 56 23·7	S. 5 4	20 N. 45 S.
3	*π* Sagittarii	3	22 2 33	19 1 32·90	21 14 21·7	S. 33 11	4 S. 79 S.
4	50 Sagittarii	6	4 37 24	19 18 5·00	22 3 3·9	N. 64 36	68 N. 27 N.
4	*f* Sagittarii	5	12 51 31	19 38 18·38	S. 20 5 22·0	N. 15 55	43 N. 25 S.
5	τ^2 Capricor.	5	11 40 1	20 31 33·12	S. 15 26 10·7	S. 36 1	0 83 S.
7	*κ* Aquarii -	5	21 14 44	22 30 37·04	S. 4 56 14·0	N. 38 1	84 N. 4 S.
8	*κ* Piscium -	4½	23 16 24	23 19 52·36	N. 0 30 9·3	N. 45 8	90 N. 4 N.
9	16 Piscium -	6	4 22 14	23 29 21·82	1 20 20·6	N. 59 19	90 N. 21 N.
9	19 Piscium -	6	9 45 22	23 39 21·64	N. 2 43 28·2	N. 43 37	90 N. 3 N.
9	*ω* Piscium -	4	16 42 41	23 52 14·62	N. 6 6 6·8	S. 72 57	46 S. 84 S.
10	45 Piscium -	6	6 57 0	0 18 36·23	6 55 50·1	N. 49 2	90 N. 10 N.
11	*η* Piscium -	3½	17 51 30	1 24 7·71	14 38 10·7	S. 27 38	13 N. 65 S.
13	47 Arietis -	6	13 27 19	2 50 13·86	20 6 55·7	N. 21 1	65 N. 7 S.
13	*ε* Arietis -	4½	14 0 27	2 51 21·70	N. 20 47 19·8	S. 15 34	24 N. 43 S.

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Month and Day.	Star's Name.	Magnitude.	Greenwich *Mean Time* of *Apparent* ☌ in R.A. of ☾ and ✱.	At Greenwich Mean Time of ☌			Limiting Parallels.
				Apparent R.A. of ☾ and ✱.	*Apparent* Declination of ✱.	Diff. of *Apparent* Dec. of ☾ and ✱.	
			h m s	h m s	° ′ ″	′ ″	Latitude. ° °
Dec. 13	ζ Arietis -	4½	21 35 53	3 7 0·56	N.20 32 0·2	N.49 30	90 N. 25 N.
14	τ^1 Arietis -	5	0 37 23	3 13 18·00	20 38 58·9	N.60 50	90 N. 41 N.
14	17 Tauri - -	4	11 45 41	3 36 43·58	23 40 45·6	S.61 12	32 S. 66 S.
14	23 Tauri - -	5	12 26 48	3 38 10·83	23 31 4·8	S.48 16	12 S. 66 S.
14	η Tauri - -	3	12 59 6	3 39 19·45	N.23 40 39·9	S.55 19	22 S. 66 S.
14	27 Tauri - -	4	13 46 24	3 41 0·01	N.23 37 51·0	S.48 51	13 S. 66 S.
14	32 Tauri - -	6	17 24 37	3 48 45·48	22 4 46·1	N.60 15	90 N. 43 N.
16	121 Tauri - -	6	14 18 31	5 27 4·17	23 56 42·4	N.22 44	68 N. 6 N.
17	1 Geminor.	5	3 13 2	5 55 46·49	23 16 1·8	N.40 14	90 N. 20 N.
17	3 Geminor.	6	5 44 46	6 1 23·80	N.23 7 55·1	N.41 26	90 N. 21 N.
17	6 Geminor.	6	6 54 51	6 3 59·53	N.22 56 8·2	N.49 45	90 N. 30 N.
17	μ Geminor.	3	11 42 57	6 14 39·24	22 34 49·6	N.55 8	90 N. 36 N.
18	δ Geminor.	3½	13 43 22	7 11 55·22	22 13 54·5	S.57 19	22 S. 68 S.
18	56 Geminor.	5½	14 36 21	7 13 50·70	20 42 0·8	N.28 42	75 N. 1 N.
21	ε Leonis -	3½	9 4 55	9 33 49·09	N.10 30 57·7	S.11 30	29 N. 49 S.
21	π Leonis -	5	18 28 14	9 52 56·84	N. 8 42 8·9	S.20 44	21 N. 59 S.
23	p^2 Leonis -	5	6 44 44	11 6 43·39	N. 0 40 43·6	S.28 27	14 N. 70 S.
23	ε Leonis -	5	14 47 59	11 23 17·06	S. 2 14 40·1	N.34 21	78 N. 9 S.
28	δ Scorpii -	2½	10 5 24	15 52 10·78	22 13 32·6	S.58 41	33 S. 90 S.
28	ρ Ophiuchi	5	19 29 52	16 17 18·91	S.23 7 29·1	S.44 12	20 S. 90 S.
28	22 Scorpii -	5	21 10 33	16 21 49·63	S.24 48 24·8	N.51 17	65 N. 10 N.

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OCCULTATIONS OF PLANETS AND FIXED STARS BY THE MOON, VISIBLE AT GREENWICH.

*** The Angles are reckoned towards the right hand round the circumference of the Moon's image as seen in an inverting telescope.

Month and Day.	Star's Name.	Magnitude.	Disappearance.				Reappearance.			
			Sidereal Time.	Mean Time.	Angle from N. Point.	Angle from Vertex.	Sidereal Time.	Mean Time.	Angle from N. Point.	Angle from Vertex.
			h m	h m	°	°	h m	h m	°	°
Jan. 6	*b* Scorpii - -	5	13 41†	18 34	342	324				
6	A Scorpii - -	5	14 19	19 11	121	107	15 10	20 2	207	202
13	λ Capricorni -	5½	0 19	4 46	77	102	1 7	5 35	346	16
23	5 Geminorum	6	11 35†	15 21	348	29				
24	B.A.C. 2238 -	6	1 27	5 11	91	49	2 29	6 13	263	220
24	δ Geminorum	3½	15 4	18 46	110	143	15 43‡	19 24	221	250
26	e^1 Cancri - -	6	6 25	10 1	113	83	7 14	10 49	198	175
27	B.A.C. 3398 -	6	8 54	12 25	75	63	10 2	13 33	221	224
27	B.A.C. 3407 -	6	10 33	14 4	7	17	11 18	14 48	288	306
27	π Leonis - -	5	11 39	15 10	24	45	12 34	16 5	272	302
28	34 Sextantis -	6	4 59	8 27	58	19	5 56	9 23	251	214
29	B.A.C. 4006 -	6	14 13	17 35	43	67	15 16	18 38	256	287
30	*q* Virginis - -	6	8 0†	11 19	150	115				
Feb. 16	ε Arietis - -	4½	9 40	11 52	99	137	10 35	12 47	277	312
17	23 Tauri - - -	5	7 51	9 59	144	187	8 35	10 43	224	267
17	η Tauri - - -	3	8 49†	10 57	184	226				
17	27 Tauri - - -	4	9 35†	11 43	183	224				
17	28 Tauri - -	5½	9 36†	11 44	183	224				
21	63 Geminorum	5½	5 38†	7 31	346	320				
22	d^2 Cancri - -	6	4 22†	6 12	164	125				
23	ξ Leonis - -	6	11 13	12 57	55	78	12 18	14 3	244	276
23	ο Leonis - -	3½	16 5	17 49	20	58	16 40‡	18 24	291	328
24	B.A.C. 3529 -	6	7 15	8 56	106	75	8 1	9 42	194	168
25	p^5 Leonis - -	5	6 41	8 18	75	39	7 40	9 17	226	193
25	*e* Leonis - -	5	16 38	18 14	2	40	17 5	18 41	305	343
Mar. 3	A Ophiuchi -	5	13 14‡	14 27	123	91	14 6	15 18	221	194
8	λ Capricorni -	5½	16 24‡	17 16	150	112	17 15	18 7	254	219
15	μ Arietis - -	5½	9 57	10 23	88	124	10 48‡	11 14	291	323
19	5 Geminorum	6	8 43	8 54	42	80	9 41	9 51	293	335
20	δ Geminorum	3½	14 46†	14 52	164	199				
21	B.A.C. 2683 -	6	9 40	9 43	7	32	10 17	10 19	305	336
23	B.A.C. 3398 -	6	10 22	10 17	123	130	10 52	10 47	173	187
23	B.A.C. 3407 -	6	11 29	11 23	48	69	12 35	12 29	248	278
23	π Leonis - -	5	12 39	12 33	58	89	13 42	13 36	241	277
24	34 Sextantis -	6	5 45	5 37	62	25	6 45	6 36	244	210
25	B.A.C. 4006 -	6	14 0	13 46	18	41	14 49	14 35	280	309
29	B.A.C. 5197 -	6	11 34‡	11 5	64	31	12 38	12 8	259	233
29	A Scorpii - -	5	15 31	15 1	43	40	16 33	16 3	292	299
29	3 Scorpii - -	6	15 53	15 23	79	80	17 8	16 37	259	272
29	B.A.C. 5255 -	6	15 58	15 28	27	29	16 46	16 16	309	318

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OCCULTATIONS OF PLANETS AND FIXED STARS BY THE MOON,
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Month and Day.	Star's Name.	Magnitude.	Disappearance. Sidereal Time.	Disappearance. Mean Time.	Disappearance. Angle from N. Point.	Disappearance. Angle from Vertex.	Reappearance. Sidereal Time.	Reappearance. Mean Time.	Reappearance. Angle from N. Point.	Reappearance. Angle from Vertex.
			h m	h m	°	°	h m	h m	°	°
Apr. 5	θ Aquarii - -	4½	16 18‡	15 21	165	126	16 55	15 57	239	201
14	k Tauri - -	5½	8 48	7 17	118	161	9 45	8 13	233	276
19	ξ Leonis - -	6	10 35	8 43	125	141	11 4	9 12	174	195
19	o Leonis - -	3½	15 33	13 41	88	127	16 22	14 29	223	261
21	p^1 Leonis - -	5	8 25†	6 26	148	121				
26	σ Scorpii - -	3½	12 55	10 35	97	68	13 58	11 38	236	216
30	π Capricorni -	5	17 34†	14 58	198	174				
30	o Capricorni -	6	18 21	15 45	58	39	19 8	16 31	346	333
May 15	d^2 Cancri - -	6	13 16†	9 41	156	197				
17	16 Sextantis -	6	14 20†	10 38	331	8				
18	p^2 Leonis - -	6	15 37	11 50	33	70	16 27	12 41	273	311
19	B.A.C. 4006 -	6	12 43	8 53	58	69	13 53	10 3	238	260
23	B.A.C. 5197 -	6	12 26	8 20	38	10	13 20	9 14	287	266
23	3 Scorpii - -	6	16 50	12 44	30	40	17 36	13 30	312	328
June 11	ζ Cancri - -	5½	14 4	8 43	74	114	14 57	9 36	244	282
14	36 Sextantis -	6	14 18	8 46	121	155	14 49	9 16	180	216
17	69 Virginis - -	5½	17 34	11 49	28	62	18 20‡	12 35	292	329
20	σ Scorpii - -	3½	12 46	6 50	86	56	13 52	7 56	247	226
25	18 Aquarii - -	6	17 56	11 40	176	147	18 29	12 13	232	206
28	19 Piscium - -	6	21 28†	14 59	212	189				
29	45 Piscium - -	6	17 54	11 22	149	111	18 42	12 10	262	223
July 20	B.A.C. 6607 -	6	22 42	14 46	149	179	23 32‡	15 36	252	287
23	B.A.C. 7620 -	6	19 24†	11 17	29	6				
25	9 Piscium - -	6	20 50	12 35	180	154	21 29	13 15	245	224
25	κ Piscium - -	4½	20 57†	12 42	212	187				
Aug. 1	103 Tauri - - -	6	22 38†	13 55	8	328				
13	B.A.C. 5197 -	6	16 45	7 17	64	75	17 57	8 28	276	297
26	47 Arietis - -	6	20 17	9 56	143	105	21 4	10 44	256	215
27	33 Tauri - -	6	0 38	14 13	42	3	1 11	14 45	351	314
29	121 Tauri - -	6	21 11§	10 39	17	346	21 23	10 51	350	318
Sept. 14	π Capricorni -	5	19 38	8 3	90	83	20 49	9 14	320	325
14	ρ Capricorni -	5	20 53	9 17	135	141	22 5	10 30	277	294
15	18 Aquarii - -	6	0 4	12 24	83	109	0 58	13 18	336	7
18	16 Piscium - -	6	20 39†	8 48	210	182				
18	19 Piscium - -	6	3 23	15 31	146	180	4 22	16 30	269	306
19	45 Piscium - -	6	23 21	11 26	152	140	0 31	12 35	274	277
Oct. 10	B.A.C. 6607 -	6	22 42†	9 24	20	50				
15	9 Piscium - -	6	0 2	10 24	133	141	1 19	11 41	294	316
15	κ Piscium - -	4½	0 18	10 40	176	187	1 6	11 28	251	271
20	ξ Arietis - -	4½	21 13	7 16	95	55	22 12	8 15	303	261

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OCCULTATIONS OF PLANETS AND FIXED STARS BY THE MOON, VISIBLE AT GREENWICH.

*** The Angles are reckoned towards the right hand round the circumference of the Moon's image as seen in an inverting telescope.

Month and Day.	Star's Name.	Magnitude.	Disappearance.				Reappearance.			
			Sidereal Time.	Mean Time.	Angle from N. Point.	Angle from Vertex.	Sidereal Time.	Mean Time.	Angle from N. Point.	Angle from Vertex.
			h m	h m	°	°	h m	h m	°	°
Oct. 22	103 Tauri - -	6	2 41	12 35	102	67	4 2	13 56	270	252
23	3 Geminorum	6	8 48†	18 37	348	25				
24	*d* Geminorum	6	2 1†	11 48	357	315				
Nov. 6	B.A.C. 6448 -	6	21 39	6 35	96	121	22 43‡	7 39	300	332
14	101 Piscium - -	6	5 45	14 8	97	136	6 51	15 14	298	338
16	ζ Arietis - -	4½	7 50†	16 5	7	49				
16	τ^1 Arietis - -	5	10 52†	19 6	5	40				
17	33 Tauri - -	6	2 0	10 13	153	125	2 54	11 6	236	219
19	121 Tauri - - -	6	22 52†	6 56	185	146				
20	*d* Geminorum	6	11 19	19 18	81	123	12 19	20 18	246	288
21	56 Geminorum	5½	23 21§	7 18	108	74	0 10	8 7	240	203
24	16 Sextantis -	6	8 38	16 22	56	38	9 54	17 37	242	240
25	55 Leonis - -	6	7 28†	15 8	332	300				
26	B.A.C. 4006 -	6	9 19	16 54	64	40	10 28	18 4	231	217
Dec. 4	50 Sagittarii -	6	22 4†	5 10	21	45				
9	16 Piscium - -	6	20 5	2 52	98	66	21 13	3 59	324	300
9	19 Piscium - -	6	3 41	10 27	47	82	4 5	10 50	6	42
10	45 Piscium - -	6	23 25	6 8	86	74	0 30	7 12	339	342
13	47 Arietis - -	6	7 43	14 13	132	173	8 36	15 5	243	284
14	32 Tauri - - -	6	11 58†	18 23	2	34				
16	121 Tauri - - -	6	8 22	14 39	115	154	9 20	15 37	227	269
17	3 Geminorum	6	22 2	4 17	92	59	22 55	5 10	270	233
17	6 Geminorum	6	23 16	5 31	38	0	23 51	6 5	324	283
18	56 Geminorum	5½	8 16	14 25	84	102	9 31	15 40	236	268
23	*e* Leonis - -	5	7 32	13 22	58	25	8 39	14 28	243	215

† A near approach.

‡ Star below the horizon.

§ Star rising.

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MEAN TIME.

JANUARY.

	d	h	m	s
I. Sh. I. *	1	12	26	
I. Tr. I. *		13	19	
I. Sh. E. *		14	47	
I. Tr. E. *		15	39	
III. Sh. I.	2	5	48	
II. Sh. I. †		8	22	
III. Tr. I. *		9	17	
III. Sh. E. *		9	31	
I. Ec. D. *		9	44	2·3
II. Tr. I. *		10	7	
II. Sh. E. *		11	18	
I. Oc. R. *		12	53	
III. Tr. E. *		12	59	
II. Tr. E. *		13	4	
I. Sh. I.	3	6	55	
I. Tr. I. †		7	46	
I. Sh. E. *		9	15	
I. Tr. E. *		10	6	
IV. Ec. D. †		20	7	4·3
IV. Ec. R.	4	0	53	34·7
II. Ec. D.		2	59	22·5
IV. Oc. D.		3	59	
I. Ec. D.		4	12	21·3
I. Oc. R.		7	20	
II. Oc. R.		7	36	
IV. Oc. R. *		8	51	
I. Sh. I.	5	1	23	
I. Tr. I.		2	12	
I. Sh. E.		3	43	
I. Tr. E.		4	32	
III. Ec. D. †		20	2	30·4
II. Sh. I.		21	39	
I. Ec. D.		22	40	39·5
II. Tr. I.		23	16	
II. Sh. E.	6	0	35	
I. Oc. R.		1	46	
II. Tr. E.		2	13	
III. Oc. R.		2	54	
I. Sh. I. †		19	51	
I. Tr. I.		20	39	
I. Sh. E.		22	12	
I. Tr. E.		22	59	
II. Ec. D. *	7	16	16	56·9
I. Ec. D. *		17	8	57·9
I. Oc. R.		20	13	
II. Oc. R.		20	46	
I. Sh. I. *	8	14	20	
I. Tr. I. *		15	5	
I. Sh. E. *		16	40	
I. Tr. E. *		17	25	
III. Sh. I. *	9	9	46	
II. Sh. I. *		10	55	
I. Ec. D. *		11	37	18·1
II. Tr. I. *		12	25	
III. Tr. I. *		12	43	
III. Sh. E. *		13	29	
II. Sh. E. *		13	51	
I. Oc. R. *		14	39	
II. Tr. E. *		15	21	
III. Tr. E. *		16	25	
I. Sh. I. *	10	8	49	
I. Tr. I. *		9	31	
I. Sh. E. *		11	9	
I. Tr. E. *		11	52	
II. Ec. D.	11	5	35	40·8
I. Ec. D.		6	5	38·5
I. Oc. R. *		9	5	
II. Oc. R. *		9	55	
I. Sh. I.	12	3	17	
IV. Sh. I.		3	28	
I. Tr. I.		3	58	
I. Sh. E.		5	37	
I. Tr. E.		6	18	
IV. Sh. E. *		8	24	
IV. Tr. I. *		9	48	
IV. Tr. E. *		14	39	
III. Ec. D.	13	0	0	19·2
II. Sh. I.		0	12	
I. Ec. D.		0	33	57·9
II. Tr. I.		1	32	
II. Sh. E.		3	8	
I. Oc. R.		3	31	
II. Tr. E.		4	29	
III. Oc. R.		6	18	
I. Sh. I.		21	46	
I. Tr. I.		22	24	
I. Sh. E.	14	0	6	
I. Tr. E.		0	44	
II. Ec. D. *		18	53	18·9
I. Ec. D. *		19	2	17·8
I. Oc. R.		21	57	
II. Oc. R.		23	5	
I. Sh. I. *	15	16	14	
I. Tr. I. *		16	51	
I. Sh. E. *	15	18	34	
I. Tr. E. †		19	11	
II. Sh. I. *	16	13	28	
I. Ec. D. *		13	30	39·4
III. Sh. I. *		13	44	
II. Tr. I. *		14	40	
III. Tr. I. *		16	6	
I. Oc. R. *		16	23	
II. Sh. E. *		16	25	
III. Sh. E. *		17	27	
II. Tr. E. *		17	36	
III. Tr. E. †		19	48	
I. Sh. I. *	17	10	43	
I. Tr. I. *		11	17	
I. Sh. E. *		13	3	
I. Tr. E. *		13	37	
I. Ec. D. *	18	7	59	1·5
II. Ec. D. *		8	12	6·1
I. Oc. R. *		10	49	
II. Oc. R. *		12	13	
I. Sh. I.	19	5	11	
I. Tr. I.		5	43	
I. Sh. E. †		7	32	
I. Tr. E. *		8	3	
I. Ec. D.	20	2	27	22·5
II. Sh. I.		2	45	
II. Tr. I.		3	47	
III. Ec. D.		3	57	58·4
I. Oc. R.		5	15	
II. Sh. E.		5	42	
II. Tr. E. †		6	43	
III. Oc. R. *		9	38	
IV. Ec. D. *		14	6	49·5
IV. Oc. R.		23	36	
I. Sh. I.		23	40	
I. Tr. I.	21	0	9	
I. Sh. E.		2	0	
I. Tr. E.		2	29	
I. Ec. D.		20	55	44·1
II. Ec. D.		21	29	48·0
I. Oc. R.		23	41	
II. Oc. R.	22	1	22	
I. Sh. I. *		18	8	
I. Tr. I. *		18	35	
I. Sh. E.		20	28	
I. Tr. E.		20	55	
I. Ec. D. *	23	15	24	7·0

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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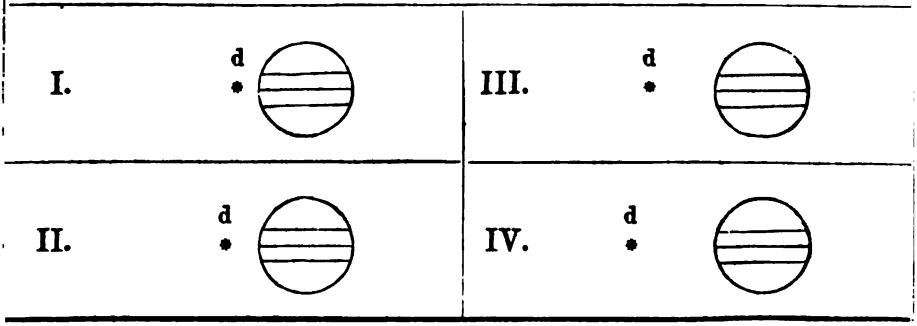
MEAN TIME.

JANUARY.

	d	h	m	s
II. Sh. I. *	23	16	2	
II. Tr. I. *		16	54	
III. Sh. I. *		17	43	
I. Oc. R. *		18	7	
II. Sh. E. *		18	58	
III. Tr. I. †		19	26	
II. Tr. E. †		19	50	
III. Sh. E.		21	26	
III. Tr. E.		23	8	
I. Sh. I. *	24	12	37	
I. Tr. I. *		13	1	
I. Sh. E. *		14	57	
I. Tr. E. *		15	21	
I. Ec. D. *	25	9	52	31·2
II. Ec. D. *		10	48	38·5
I. Oc. R. *		12	33	
II. Oc. R. *		14	30	
I. Sh. I. *	26	7	6	
I. Tr. I. *		7	27	
I. Sh. E. *		9	26	
I. Tr. E. *	26	9	47	
I. Ec. D.	27	4	20	53·7
II. Sh. I.		5	19	
II. Tr. I. †		6	0	
I. Oc. R. *		6	59	
III. Ec. D. *		7	55	48·8
II. Sh. E. *		8	15	
II. Tr. E. *		8	57	
III. Oc. R. *		12	56	
I. Sh. I.	28	1	34	
I. Tr. I.		1	53	
I. Sh. E.		3	54	
I. Tr. E.		4	13	
IV. Sh. I.		21	26	
I. Ec. D.		22	49	17·3
II. Ec. D.	29	0	6	24·1
IV. Tr. I.		0	15	
I. Oc. R.		1	25	
IV. Sh. E.		2	22	
II. Oc. R.		3	38	
IV. Tr. E.	29	5	7	
I. Sh. I.		20	3	
I. Tr. I.		20	20	
I. Sh. E.		22	23	
I. Tr. E.		22	40	
I. Ec. D. *	30	17	17	42·1
II. Sh. I. *		18	36	
II. Tr. I. †		19	7	
I. Oc. R.		19	51	
II. Sh. E.		21	32	
III. Sh. E.		21	32	
III. Sh. I.		21	42	
II. Tr. E.		22	3	
III. Tr. I.		22	44	
III. Sh. E.	31	1	25	
III. Tr. E.		2	25	
I. Sh. I. *		14	31	
I. Tr. I. *		14	45	
I. Sh. E. *		16	51	
I. Tr. E. *		17	5	

Phases of the Eclipses of the Satellites for an inverting Telescope.



FEBRUARY.

	d	h	m	s
I. Ec. D. *	1	11	46	8·2
II. Ec. D. *		13	25	17·3
I. Oc. R. *		14	17	
II. Oc. R. *		16	46	
I. Sh. I. *	2	9	0	
I. Tr. I. *		9	11	
I. Sh. E. *		11	20	
I. Tr. E. *		11	31	
I. Ec. D. †	3	6	14	32·8
II. Sh. I. *		7	52	
II. Tr. I. *		8	13	
I. Oc. R. *		8	42	
II. Sh. E. *		10	49	
II. Tr. E. *		11	9	
III. Ec. D. *		11	54	15·6
III. Oc. R. *		16	12	
I. Sh. I.	4	3	28	
I. Tr. I.		3	37	
I. Sh. E. †		5	48	
I. Tr. E. †		5	57	
I. Ec. D.	5	0	42	58·4
II. Ec. D.		2	43	6·7
I. Oc. R.		3	8	
II. Oc. R. †		5	53	

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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MEAN TIME.

FEBRUARY.

	d	h	m	s
I. Sh. I.	5	21	57	
I. Tr. I.		22	3	
I. Sh. E.	6	0	17	
I. Tr. E.		0	23	
IV. Ec. D. *		8	6	45·9
IV. Oc. R. *		13	49	
I. Ec. D. †		19	11	24·8
II. Sh. I.		21	9	
II. Tr. I.		21	19	
I. Oc. R.		21	34	
II. Sh. E.	7	0	6	
II. Tr. E.		0	15	
III. Sh. I.		1	40	
III. Tr. I.		2	0	
III. Sh. E. †		5	23	
III. Tr. E. †		5	41	
I. Sh. I. *		16	25	
I. Tr. I. *		16	29	
I. Sh. E. †		18	46	
I. Tr. E. †		18	49	
I. Ec. D. *	8	13	39	53·2
I. Oc. R. *		16	0	
II. Ec. D. *		16	2	1·9
II. Oc. R. †		19	1	
I. Sh. I. *	9	10	54	
I. Tr. I. *		10	55	
I. Sh. E. *		13	14	
I. Tr. E. *		13	15	
I. Oc. D. *	10	8	6	
II. Tr. I. *		10	25	
II. Sh. I. *		10	26	
I. Oc. R. *		10	26	
II. Tr. E. *		13	22	
II. Sh. E. *		13	23	
III. Oc. D. *		15	46	
III. Oc. R.		19	28	
I. Tr. I. †	11	5	21	
I. Sh. I. †		5	23	
I. Tr. E. *		7	42	
I. Sh. E. *		7	43	
I. Oc. D.	12	2	32	
I. Oc. R.		4	52	
II. Oc. D. †		5	12	
II. Ec. R. *		8	13	2·1
I. Tr. E.		23	47	
I. Sh. I.		23	51	
I. Tr. E.	13	2	8	
I. Sh. E.	13	2	12	
I. Oc. D.		20	58	
I. Ec. R.		23	20	23·6
II. Tr. I.		23	32	
II. Sh. I.		23	43	
II. Tr. E.	14	2	28	
II. Sh. E.		2	40	
III. Tr. I. †		5	15	
III. Sh. I. †		5	39	
III. Tr. E. *		8	57	
III. Sh. E. *		9	22	
IV. Tr. I. *		14	24	
IV. Sh. I. *		15	26	
I. Tr. I. *		18	14	
I. Sh. I. *		18	20	
IV. Tr. E. †		19	16	
IV. Sh. E.		20	21	
I. Tr. E.		20	34	
I. Sh. E.		20	40	
I. Oc. D. *	15	15	23	
I. Ec. R. *		17	48	54·5
II. Oc. D. †		18	20	
II. Ec. R.		21	31	57·0
I. Tr. I. *	16	12	39	
I. Sh. I. *		12	49	
I. Tr. E. *		14	59	
I. Sh. E. *		15	9	
I. Oc. D. *	17	9	49	
I. Ec. R. *		12	17	23·0
II. Tr. I. *		12	38	
II. Sh. I. *		13	0	
II. Tr. E. *		15	34	
II. Sh. E. *		15	57	
III. Oc. D. †		19	1	
III. Ec. R.		23	25	6·5
I. Tr. I. *	18	7	5	
I. Sh. I. *		7	17	
I. Tr. E. *		9	25	
I. Sh. E. *		9	37	
I. Oc. D.	19	4	15	
I. Ec. R. *		6	45	53·1
II. Oc. D. *		7	28	
II. Ec. R. *		10	49	50·5
I. Tr. I.	20	1	31	
I. Sh. I.		1	46	
I. Tr. E.		3	52	
I. Sh. E.		4	6	
I. Oc. D.	20	22	41	
I. Ec. R.	21	1	14	23·3
II. Tr. I.		1	44	
II. Sh. I.		2	17	
II. Tr. E.		4	41	
II. Sh. E.		5	14	
III. Tr. I. *		8	31	
III. Sh. I. *		9	38	
III. Tr. E. *		12	13	
III. Sh. E. *		13	20	
I. Tr. I.		19	58	
I. Sh. I.		20	15	
I. Tr. E.		22	18	
I. Sh. E.		22	35	
I. Oc. D. *	22	17	7	
I. Ec. R.		19	42	56·5
II. Oc. D.		20	36	
IV. Oc. D.		23	3	
II. Ec. R.	23	0	8	45·4
IV. Ec. R. *		6	52	13·7
I. Tr. I. *		14	24	
I. Sh. I. *		14	43	
I. Tr. E. *		16	44	
I. Sh. E. *		17	3	
I. Oc. D. *	24	11	33	
I. Ec. R. *		14	11	26·9
II. Tr. I. *		14	51	
II. Sh. I. *		15	35	
II. Tr. E. †		17	48	
II. Sh. E. †		18	31	
III. Oc. D.		22	18	
III. Ec. R.	25	3	23	36·1
I. Tr. I. *		8	50	
I. Sh. I. *		9	12	
I. Tr. E. *		11	10	
I. Sh. E. *		11	32	
I. Oc. D. †	26	5	59	
I. Ec. R. *		8	39	59·4
II. Oc. D. *		9	44	
II. Ec. R. *		13	26	41·0
I. Tr. I.	27	3	16	
I. Sh. I.		3	40	
I. Tr. E. †		5	36	
I. Sh. E. †		6	1	
I. Oc. D.	28	0	25	
I. Ec. R.		3	8	31·4
II. Tr. I.		3	58	

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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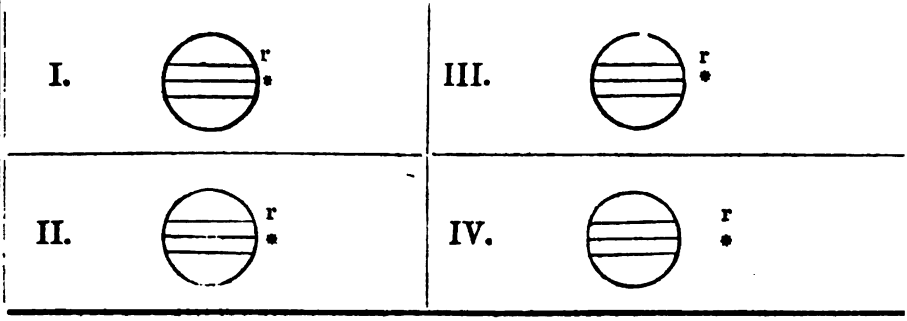
MEAN TIME.

FEBRUARY.

	d	h	m	s
II. Sh. I.	28	4	52	
II. Tr. E. *		6	55	
II. Sh. E. *		7	48	
III. Tr. I. *	28	11	49	
III. Sh. I. *		13	37	
III. Tr. E. *		15	32	
III. Sh. E. *	28	17	20	
I. Tr. I.		21	42	
I. Sh I.		22	9	

Phases of the Eclipses of the Satellites for an inverting Telescope.



MARCH.

	d	h	m	s	
I. Tr. E.	1	0	2		
I. Sh. E.		0	29		
I. Oc. D.		18	51		
I. Ec. R.		21	37	6·9	
II. Oc. D.		22	52		
II. Ec. R.	2	2	45	35·3	
I. Tr. I. *		16	9		
I. Sh. I. *		16	38		
I. Tr. E.		18	29		
I. Sh. E.		18	58		
IV. Tr. I.	3	4	40		
IV. Sh. I. *		9	26		
IV. Tr. E. *		9	34		
I. Oc. D. *		13	17		
IV. Sh. E. *		14	20		
I. Ec. R. *		16	5	39·3	
II. Tr. I. *		17	6		
II. Sh. I. †		18	9		
II. Tr. E.		20	2		
II. Sh. E.		21	6		
III. Oc. D.	4	1	37		
III. Ec. R. *		7	22	8·4	
I. Tr. I. *		10	35		
I. Sh. I. *		11	7		
I. Tr. E. *		12	55		
I. Sh. E. *		13	27		
I. Oc. D. *	5	7	44		
I. Ec. R. *		10	34	13·8	
II. Oc. D. *		12	1		
II. Ec. R. *		16	3	32·9	
I. Tr. I.	6	5	1		
I. Sh. I.		5	35		
I. Tr. E. *		7	21		
I. Sh. E. *		7	55		
I. Oc. D.	7	2	10		
I. Ec. R.		5	2	47·7	
II. Tr. I. †		6	14		
II. Sh. I. *		7	27		
II. Tr. E. *		9	10		
II. Sh. E. *		10	23		
III. Tr. I. *		15	10		
III. Sh. I. †		17	36		
III. Tr. E.		18	53		
III. Sh. E.		21	19		
I. Tr. I.		23	27		
I. Sh. I.	8	0	4		
I. Tr. E.		1	48		
I. Sh. E.		2	24		
I. Oc. D.		20	36		
I. Ec. R.		23	31	25·4	
II. Oc. D.	9	1	10		
II. Ec. R.		5	22	25·8	
I. Tr. I.	9	17	54		
I. Sh. I.		18	33		
I. Tr. E.		20	14		
I. Sh. E.		20	53		
I. Oc. D. *	10	15	3		
I. Ec. R.		17	59	59·7	
II. Tr. I.		19	22		
II. Sh. I.		20	44		
II. Tr. E.		22	18		
II. Sh. E.		23	40		
III. Oc. D.	11	4	58		
III. Ec. R. *		11	20	33·5	
I. Tr. I. *		12	20		
I. Sh. I. *		13	1		
IV. Oc. D. *		13	33		
I. Tr. E. *		14	40		
I. Sh. E. *		15	21		
IV. Oc. R.		18	26		
IV. Ec. D.		20	9	9·8	
IV. Ec. R.	12	0	52	52·5	
I. Oc. D. *		9	29		
I. Ec. R. *		12	28	36·5	
II. Oc. D. *		14	20		
II. Ec. R.		18	40	24·5	
I. Tr. I. *	13	6	47		
I. Sh. I. *		7	30		

The abbreviations denote as follows :—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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MEAN TIME.

MARCH.

	d	h	m	s
I. Tr. E. *	13	9	7	
I. Sh. E. *		9	50	
I. Oc. D.	14	3	55	
I. Ec. R. *		6	57	12·0
II. Tr. I. *		8	31	
II. Sh. I. *		10	1	
II. Tr. E. *		11	27	
II. Sh. E. *		12	58	
III. Tr. I.		18	35	
III. Sh. I.		21	36	
III. Tr. E.		22	17	
I. Tr. I.	15	1	14	
III. Sh. E.		1	18	
I. Sh. I.		1	59	
I. Tr. E.		3	34	
I. Sh. E.		4	19	
I. Oc. D.		22	22	
I. Ec. R.	16	1	25	51·6
II. Oc. D.		3	30	
II. Ec. R. *		7	59	15·2
I. Tr. I.		19	40	
I. Sh. I.		20	27	
I. Tr. E.		22	0	
I. Sh. E.		22	48	
I. Oc. D. †	17	16	49	
I. Ec. R.		19	54	27·8
II. Tr. I.		21	40	
II. Sh. I.		23	19	
II. Tr. E.	18	0	37	
II. Sh. E.		2	15	
III. Oc. D. *		8	23	
I. Tr. I. *		14	7	
I. Sh. I. *		14	56	
III. Ec. R. *		15	19	9·4
I. Tr. E. †		16	27	
I. Sh. E.		17	16	
I. Oc. D. *	19	11	15	
I. Ec. R. *		14	23	6·3
II. Oc. D. †		16	40	
IV. Tr. I.		19	30	
II. Ec. R.	19	21	17	14·6
IV. Tr. E.	20	0	25	
IV. Sh. I.		3	26	
IV. Sh. E. *		8	20	
I. Tr. I. *		8	34	
I. Sh. I. *		9	25	
I. Tr. E. *		10	54	
I. Sh. E. *		11	45	
I. Oc. D.	21	5	42	
I. Ec. R. *		8	51	43·4
II. Tr. I. *		10	50	
II. Sh. I. *		12	36	
II. Tr. E. *		13	46	
II. Sh. E. *		15	33	
III. Tr. I.		22	2	
III. Sh. I.	22	1	35	
III. Tr. E.		1	45	
I. Tr. I.		3	1	
I. Sh. I.		3	54	
III. Sh. E.		5	17	
I. Tr. E.		5	21	
I. Sh. E.		6	14	
I. Oc. D.	23	0	9	
I. Ec. R.		3	20	25·0
II. Oc. D.		5	51	
II. Ec. R. *		10	36	2·1
I. Tr. I.		21	28	
I. Sh. I.		22	23	
I. Tr. E.		23	48	
I. Sh. E.	24	0	43	
I. Oc. D.		18	36	
I. Ec. R.		21	49	2·8
II. Tr. I.	25	0	0	
II. Sh. I.		1	54	
II. Tr. E.		2	57	
II. Sh. E.		4	50	
III. Oc. D. *		11	53	
III. Oc. R. *		15	36	
III. Ec. D. †		15	45	41·9
I. Tr. I. †		15	55	
I. Sh. I.	25	16	51	
I. Tr. E.		18	15	
I. Sh. E.		19	11	
III. Ec. R.		19	18	21·5
I. Oc. D. *	26	13	3	
I. Ec. R. †		16	17	43·1
II. Oc. D.		19	3	
II. Ec. R.		23	54	2·0
I. Tr. I. *	27	10	22	
I. Sh. I. *		11	20	
I. Tr. E. *		12	42	
I. Sh. E. *		13	40	
IV. Oc. D.	28	4	46	
I. Oc. D. *		7	30	
IV. Oc. R. *		9	41	
I. Ec. R. *		10	46	21·6
II. Tr. I. *		13	11	
IV. Ec. D. *		14	10	59·2
II. Sh. I. *		15	11	
II. Tr. E. †		16	8	
II. Sh. E.		18	8	
IV. Ec. R.		18	53	16·0
III. Tr. I.	29	1	34	
I. Tr. I.		4	49	
III. Tr. E.		5	16	
III. Sh. I.		5	34	
I. Sh. I.		5	49	
I. Tr. E. †		7	9	
I. Sh. E. *		8	9	
III. Sh. E. *		9	16	
I. Oc. D.	30	1	57	
I. Ec. R.		5	15	4·9
II. Oc. D. *		8	15	
II. Ec. R. *		13	12	45·7
I. Tr. I.		23	16	
I. Sh. I.	31	0	17	
I. Tr. E.		1	36	
I. Sh. E.		2	37	
I. Oc. D.		20	24	
I. Ec. R.		23	43	44·2

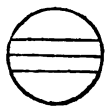
The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

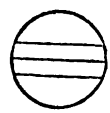
Digitized by Google

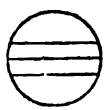
MEAN TIME.

MARCH.

Phases of the Eclipses of the Satellites for an inverting Telescope.

I. 

III. 

II. 

IV.

APRIL.

	d	h	m	s
II. Tr. I.	1	2	23	
II. Sh. I.		4	29	
II. Tr. E.		5	20	
II. Sh. E. *		7	25	
III. Oc. D. †		15	27	
I. Tr. I.		17	44	
I. Sh. I.		18	46	
III. Oc. R.		19	10	
III. Ec. D.		19	44	58·2
I. Tr. E.		20	4	
I. Sh. E.		21	6	
III. Ec. R.		23	17	27·4
I. Oc. D. *	2	14	52	
I. Ec. R.		18	12	26·1
II. Oc. D.		21	28	
II. Ec. R.	3	2	30	45·4
I. Tr. I. *		12	11	
I. Sh. I. *		13	15	
I. Tr. E. *		14	31	
I. Sh. E. †		15	35	
I. Oc. D. *	4	9	19	
I. Ec. R. *		12	41	5·9
II. Tr. I. †		15	36	
II. Sh. I.		17	47	
II. Tr. E.		18	32	
II. Sh. E.		20	43	
III. Tr. I.	5	5	10	
I. Tr. I. †		6	39	
I. Sh. I. *		7	44	
III. Tr. E. *	5	8	53	
I. Tr. E. *		8	59	
III. Sh. I. *		9	33	
I. Sh. E. *		10	4	
IV. Tr. I. *		11	12	
III. Sh. E. *		13	15	
IV. Tr. E.		16	7	
IV. Sh. I.		21	27	
IV. Sh. E.		26	20	
I. Oc. D.	6	3	46	
I. Ec. R. †		7	9	50·7
II. Oc. D. *		10	41	
II. Ec. R. †		15	49	24·6
I. Tr. I.	7	1	6	
I. Sh. I.		2	13	
I. Tr. E.		3	26	
I Sh. E.		4	33	
I. Oc. D.		22	14	
I. Ec. R.	8	1	38	31·3
II. Tr. I.		4	49	
II. Sh. I. †		7	5	
II. Tr. E. *		7	45	
II. Sh. E. *		10	1	
III. Oc. D.		19	7	
I. Tr. I.		19	34	
I. Sh. I.		20	41	
I. Tr. E.		21	54	
III. Oc. R.		22	49	
I. Sh. E.		23	1	
III. Ec. D.	8	23	44	50·7
III. Ec. R.	9	3	17	8·6
I. Oc. D.		16	42	
I. Ec. R.		20	7	14·7
II. Oc. D.		23	55	
II. Ec. R.	10	5	7	23·3
I. Tr. I. *		14	2	
I. Sh. I. †		15	10	
I. Tr. E.		16	22	
I. Sh. E.		17	30	
I. Oc. D. *	11	11	9	
I. Ec. R. †		14	35	55·5
II. Tr. I.		18	2	
II. Sh. I.		20	23	
II. Tr. E.		20	59	
II. Sh. E.		23	19	
I. Tr. I. *	12	8	29	
III. Tr. I. *		8	51	
I. Sh. I. *		9	39	
I. Tr. E. *		10	49	
I. Sh. E. *		11	59	
III. Tr. E. *		12	34	
III. Sh. I. *		13	33	
III. Sh. E.		17	14	
I. Oc. D.	13	5	37	
I. Ec. R. *		9	4	41·6
II. Oc. D. *		13	10	
II. Ec. R.		18	25	57·3

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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MEAN TIME.

APRIL.

	d	h	m	s
IV. Oc. D.	13	20	56	
IV. Oc. R.	14	1	51	
I. Tr. I.		2	57	
I. Sh. I.		4	8	
I. Tr. E.		5	17	
I. Sh. E.		6	28	
IV. Ec. D. *		8	13	9·0
IV. Ec. R. *		12	53	43·3
I. Oc. D.	15	0	5	
I. Ec. R.		3	33	23·3
II. Tr. I. †		7	17	
II. Sh. I. *		9	41	
II. Tr. E. *		10	13	
II. Sh. E. *		12	37	
I. Tr. I.		21	25	
I. Sh. I.		22	36	
III. Oc. D.		22	50	
I. Tr. E.		23	45	
I. Sh. E.	16	0	56	
III. Oc. R.		2	33	
III. Ec. D.		3	44	8·9
III. Ec. R. †		7	16	14·8
I. Oc. D.		18	33	
I. Ec. R.		22	2	7·9
II. Oc. D.	17	2	25	
II. Ec. R. †		7	43	54·8
I. Tr. I.		15	53	
I. Sh. I.		17	5	
I. Tr. E.		18	13	
I. Sh. E.		19	25	
I. Oc. D. *	18	13	1	
I. Ec. R.		16	30	49·5
II. Tr. I.		20	32	
II. Sh. I.		22	59	
II. Tr. E.		23	28	
II. Sh. E.	19	1	55	
I. Tr. I. *		10	21	
I. Sh. I. *		11	34	
III. Tr. I. *		12	37	
I. Tr. E. *	19	12	41	
I. Sh. E. *		13	54	
III. Tr. E.		16	20	
III. Sh. I.		17	32	
III. Sh. E.		21	14	
I. Oc. D. †	20	7	29	
I. Ec. R. *		10	59	36·7
II. Oc. D.		15	40	
II. Ec. R.		21	2	23·2
I. Tr. I.	21	4	49	
I. Sh. I.		6	3	
I. Tr. E. †		7	9	
I. Sh. E. *		8	23	
I. Oc. D.	22	1	57	
IV. Tr. I.		3	50	
I. Ec. R.		5	28	19·3
IV. Tr. E. *		8	45	
II. Tr. I. *		9	47	
II. Sh. I. *		12	16	
II. Tr. E. *		12	44	
II. Sh. E.		15	13	
IV. Sh. I.		15	29	
IV. Sh. E.		20	19	
I. Tr. I.		23	17	
I. Sh. I.	23	0	31	
I. Tr. E.		1	37	
III. Oc. D.		2	37	
I. Sh. E.		2	52	
III. Oc. R.		6	20	
III. Ec. D. †		7	43	25·3
III. Ec. R. *		11	15	18·3
I. Oc. D.		20	25	
I. Ec. R.		23	57	5·0
II. Oc. D.	24	4	56	
II. Ec. R. *		10	20	18·9
I. Tr. I.		17	46	
I. Sh. I.		19	0	
I. Tr. E.		20	6	
I. Sh. E.		21	20	
I. Oc. D.	25	14	53	
I. Ec. R.		18	25	47·2
II. Tr. I.		23	3	
II. Sh. I.	26	1	34	
II. Tr. E.		2	0	
II. Sh. E.		4	31	
I. Tr. I. *		12	14	
I. Sh. I. *		13	29	
I. Tr. E.		14	34	
I. Sh. E.		15	49	
III. Tr. I.		16	27	
III. Tr. E.		20	10	
III. Sh. I.		21	32	
III. Sh. E.	27	1	13	
I. Oc. D. *		9	21	
I. Ec. R. *		12	54	35·5
II. Oc. D.		18	13	
II. Ec. R.		23	38	40·8
I. Tr. I.	28	6	42	
I. Sh. I †		7	58	
I. Tr. E. *		9	3	
I. Sh. E. *		10	18	
I. Oc. D.	29	3	50	
I. Ec. R. †		7	23	18·7
II. Tr. I. *		12	20	
II. Sh. I.		14	52	
II. Tr. E.		15	16	
II. Sh. E.		17	49	
I. Tr. I.	30	1	11	
I. Sh. I.		2	26	
I. Tr. E.		3	31	
I. Sh. E.		4	47	
III. Oc. D.		6	29	
III. Oc. R. *		10	12	
III. Ec. D. *		11	42	31·7
IV. Oc. D. †		14	5	
III. Ec. R.		15	14	11·1
IV. Oc. R.		19	0	
I. Oc. D.		22	18	

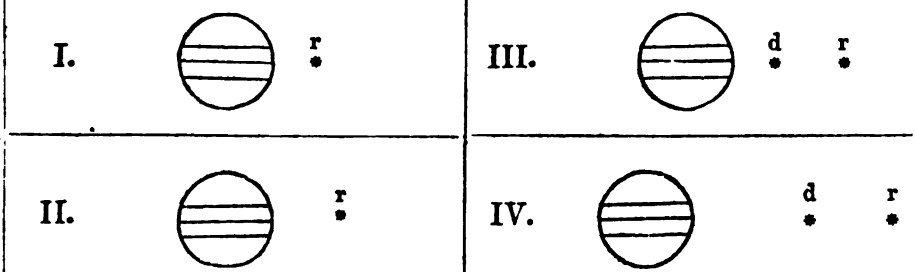
The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

Digitized by Google

MEAN TIME.

APRIL.

Phases of the Eclipses of the Satellites for an inverting Telescope.



MAY.

	d	h	m	s
I. Ec. R.	1	1	52	5·3
IV. Ec. D.		2	16	7·5
IV. Ec. R.		6	54	40·9
II. Oc. D. †		7	30	
II. Ec. R. *		12	56	34·3
I. Tr. I.		19	39	
I. Sh. I.		20	55	
I. Tr. E.		21	59	
I. Sh. E.		23	15	
I. Oc. D.	2	16	47	
I. Ec. R.		20	20	48·1
II. Tr. I.	3	1	37	
II. Sh. I.		4	11	
II. Tr. E.		4	34	
II. Sh. E.		7	7	
I. Tr. I.		14	8	
I. Sh. I.		15	24	
I. Tr. E.		16	28	
I. Sh. E.		17	44	
III. Tr. I.		20	22	
III. Tr. E.	4	0	5	
III. Sh. I.		1	32	
III. Sh. E.		5	13	
I. Oc. D. *		11	15	
I. Ec. R.		14	49	37·0
II. Oc. D.		20	47	
II. Ec. R.	5	2	14	49·6
I. Tr. I. *		8	36	
I. Sh. I. *		9	53	
I. Tr. E. *	5	10	56	
I. Sh. E. *		12	13	
I. Oc. D.	6	5	44	
I. Ec. R. *		9	18	20·9
II. Tr. I.		14	55	
II. Sh. I.		17	28	
II. Tr. E.		17	51	
II. Sh. E.		20	25	
I. Tr. I.	7	3	5	
I. Sh. I.		4	22	
I. Tr. E.		5	25	
I. Sh. E.		6	41	
III. Oc. D. *		10	26	
III. Oc. R.		14	9	
III. Ec. D.		15	41	45·5
III. Ec. R.		19	13	10·3
I. Oc. D.	8	0	13	
I. Ec. R.		3	47	8·1
II. Oc. D. *		10	5	
II. Ec. R.		15	32	40·4
IV. Tr. I.		21	24	
I. Tr. I.		21	34	
I. Sh. I.		22	50	
I. Tr. E.		23	54	
I. Sh. E.		25	10	
IV. Tr. E.	9	2	19	
IV. Sh. I. *		9	30	
IV. Sh. E.		14	19	
I. Oc. D.		18	41	
I. Ec. R.	9	22	15	51·3
II. Tr. I.	10	4	13	
II. Sh. I.		6	47	
II. Tr. E.		7	10	
II. Sh. E. *		9	43	
I. Tr. I.		16	2	
I. Sh. I.		17	19	
I. Tr. E.		18	22	
I. Sh. E.		19	39	
III. Tr. I.	11	0	20	
III. Tr. E.		4	3	
III. Sh. I.		5	31	
III. Sh. E. *		9	12	
I. Oc. D. †		13	10	
I. Ec. R.		16	44	40·8
II. Oc. D.		23	24	
II. Ec. R.	12	4	50	48·8
I. Tr. I. *		10	31	
I. Sh. I. *		11	48	
I. Tr. E. †		12	51	
I. Sh. E.		14	8	
I. Oc. D.	13	7	39	
I. Ec. R. *		11	13	24·9
II. Tr. I.		17	32	
II. Sh. I.		20	5	
II. Tr. E.		20	28	
II. Sh. E.		23	1	
I. Tr. I.	14	5	0	

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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MEAN TIME.

MAY.

	d	h	m	s
I. Sh. I.	14	6	17	
I. Tr. E.		7	20	
I. Sh. E. †		8	36	
III. Oc. D.		14	27	
III. Oc. R.		18	9	
III. Ec. D.		19	41	31·8
III. Ec. R.		23	12	41·0
I. Oc. D.	15	2	8	
I. Ec. R.		5	42	12·8
II. Oc. D. †		12	42	
II. Ec. R.		18	8	36·5
I. Tr. I.		23	29	
I. Sh. I.	16	0	45	
I. Tr. E.		1	49	
I. Sh. E.		3	5	
I. Oc. D.		20	37	
I. Ec. R.	17	0	10	56·1
II. Tr. I.		6	51	
IV. Oc. D. †		8	6	
II. Sh. I. *		9	23	
II. Tr. E. *		9	48	
II. Sh. E. †		12	20	
IV. Oc. R. †		13	2	
I. Tr. I.		17	58	
I. Sh. I.		19	14	
I. Tr. E.		20	18	
IV. Ec. D.		20	18	36·5
I. Sh. E.		21	34	
IV. Ec. R.	18	0	54	52·6
III. Tr. I.		4	23	
III. Tr. E. †		8	6	
III. Sh. I. *		9	30	
III. Sh. E.		13	11	
I. Oc. D.		15	6	
I. Ec. R.		18	39	45·9
II. Oc. D.	19	2	2	
II. Ec. R.		7	26	38·1
I. Tr. I. †		12	27	
I. Sh. I.		13	43	
I. Tr. E.		14	47	
I. Sh. E.	19	16	3	
I. Oc. D. *	20	9	35	
I. Ec. R.		13	8	30·3
II. Tr. I.		20	11	
II. Sh. I.		22	41	
II. Tr. E.		23	7	
II. Sh. E.	21	1	38	
I. Tr. I.		6	56	
I. Sh. I. †		8	12	
I. Tr. E. *		9	16	
I. Sh. E. *		10	31	
III. Oc. D.		18	31	
III. Oc. R.		22	14	
III. Ec. D.		23	41	6·3
III. Ec. R.	22	3	11	59·4
I. Oc. D.		4	5	
I. Ec. R.		7	37	18·6
II. Oc. D.		15	21	
II. Ec. R.		20	44	22·6
I. Tr. I.	23	1	25	
I. Sh. I.		2	40	
I. Tr. E.		3	45	
I. Sh. E.		5	0	
I. Oc. D.		22	34	
I. Ec. R.	24	2	6	1·9
II. Tr. I. *		9	31	
II. Sh. I. †		12	0	
II. Tr. E. †		12	28	
II. Sh. E.		14	56	
I. Tr. I.		19	54	
I. Sh. I.		21	9	
I. Tr. E.		22	15	
I. Sh. E.		23	29	
III. Tr. I. †	25	8	28	
III. Tr. E. †		12	11	
III. Sh. I.		13	29	
IV. Tr. I.		15	48	
I. Oc. D.		17	3	
III. Sh. E.		17	10	
I. Ec. R.		20	34	51·8
IV. Tr. E.	25	20	43	
IV. Sh. I.	26	3	32	
II. Oc. D.		4	41	
IV. Sh. E. †		8	19	
II. Ec. R. *		10	2	17·2
I. Tr. I.		14	24	
I. Sh. I.		15	38	
I. Tr. E.		16	44	
I. Sh. E.		17	58	
I. Oc. D. *	27	11	32	
I. Ec. R.		15	3	36·3
II. Tr. I.		22	52	
II. Sh. I.	28	1	18	
II. Tr. E.		1	48	
II. Sh. E.		4	14	
I. Tr. I. †		8	53	
I. Sh. I. *		10	6	
I. Tr. E. *		11	13	
I. Sh. E. †		12	26	
III. Oc. D.		22	39	
III. Oc. R.	29	2	22	
III. Ec. D.		3	41	10·6
I. Oc. D.		6	2	
III. Ec. R.		7	11	46·8
I. Ec. R. *		9	32	24·8
II. Oc. D.		18	1	
II. Ec. R.		23	19	57·7
I. Tr. I.	30	3	22	
I. Sh. I.		4	35	
I. Tr. E.		5	42	
I. Sh. E.		6	55	
I. Oc. D.	31	0	31	
I. Ec. R.		4	1	7·9
II. Tr. I. †		12	13	
II. Sh. I.		14	37	
II. Tr. E.		15	9	
II. Sh. E.		17	33	
I. Tr. I.		21	52	
I. Sh. I.		23	4	

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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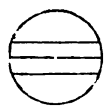
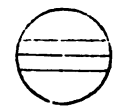
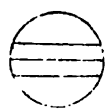
MEAN TIME.

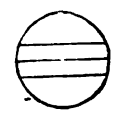
MAY.

Phases of the Eclipses of the Satellites for an inverting Telescope.

I.  r

III.  d r

II.  r

IV.  d r

JUNE.

	d	h	m	s
I. Tr. E.	1	0	11	
I. Sh. E.		1	24	
III. Tr. I.		12	37	
III. Tr. E.		16	20	
III. Sh. I.		17	29	
I. Oc. D.		19	1	
III. Sh. E.		21	9	
I. Ec. R.		22	29	57·8
II. Oc. D.	2	7	22	
II. Ec. R.		12	37	45·2
I. Tr. I.		16	21	
I. Sh. I.		17	33	
I. Tr. E.		18	41	
I. Sh. E.		19	52	
IV. Oc. D.	3	2	54	
IV. Oc. R.		7	49	
I. Oc. D.		13	30	
IV. Ec. D.		14	20	54·8
I. Ec. R.		16	58	42·1
IV. Ec. R.		18	54	36·1
II. Tr. I.	4	1	34	
II. Sh. I.		3	55	
II. Tr. E.		4	30	
II. Sh. E.		6	51	
I. Tr. I. *		10	51	
I. Sh. I. †		12	1	
I. Tr. E.		13	11	
I. Sh. E.		14	21	
III. Oc. D.	5	2	50	
III. Oc. R.	5	6	33	
III. Ec. D.		7	40	36·1
I. Oc. D.		8	0	
III. Ec. R. †		11	10	54·3
I. Ec. R. †		11	27	30·6
II. Oc. D.		20	43	
II. Ec. R.	6	1	55	21·8
I. Tr. I.		5	20	
I. Sh. I.		6	30	
I. Tr. E.		7	40	
I. Sh. E. †		8	50	
I. Oc. D.	7	2	29	
I. Ec. R.		5	56	13·5
II. Tr. I.		14	56	
II. Sh. I.		17	14	
II. Tr. E.		17	52	
II. Sh. E.		20	10	
I. Tr. I.		23	50	
I. Sh. I.	8	0	59	
I. Tr. E.		2	10	
I. Sh. E.		3	19	
III. Tr. I.		16	49	
III. Tr. E.		20	32	
I. Oc. D.		20	59	
III. Sh. I.		21	28	
I. Ec. R.	9	0	25	3·2
III. Sh. E.		1	8	
II. Oc. D. *		10	4	
II. Ec. R.		15	13	2·4
I. Tr. I.	9	18	19	
I. Sh. I.		19	27	
I. Tr. E.		20	39	
I. Sh. E.		21	47	
I. Oc. D.	10	15	28	
I. Ec. R.		18	53	47·3
II. Tr. I.	11	4	18	
II. Sh. I.		6	32	
II. Tr. E.		7	14	
II. Sh. E. *		9	28	
IV. Tr. I. †		10	53	
I. Tr. I.		12	49	
I. Sh. I.		13	56	
I. Tr. E.		15	9	
IV. Tr. E.		15	48	
I. Sh. E.		16	16	
IV. Sh. I.		21	33	
IV. Sh. E.	12	2	18	
III. Oc. D.		7	3	
I. Oc. D. *		9	58	
III. Oc. R. †		10	46	
III. Ec. D.		11	39	54·5
I. Ec. R.		13	22	35·7
III. Ec. R.		15	9	53·9
II. Oc. D.		23	25	
II. Ec. R.	13	4	30	34·9
I. Tr. I.		7	18	
I. Sh. I. †		8	25	
I. Tr. E. *		9	39	

The abbreviations denote as follows :—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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MEAN TIME.

JUNE.

	d	h	m	s
I. Sh. E. †	13	10	45	
I. Oc. D.	14	4	28	
I. Ec. R.		7	51	18·2
II. Tr. I.		17	40	
II. Sh. I.		19	51	
II. Tr. E.		20	37	
II. Sh. E.		22	47	
I. Tr. I.	15	1	48	
I. Sh. I.		2	53	
I. Tr. E.		4	8	
I. Sh. E.		5	13	
III. Tr. I.		21	4	
I. Oc. D.		22	58	
III. Tr. E.	16	0	47	
III. Sh. I.		1	28	
I. Ec. R.		2	20	7·8
III. Sh. E.		5	7	
II. Oc. D.		12	47	
II. Ec. R.		17	48	8·8
I. Tr. I.		20	18	
I. Sh. I.		21	22	
I. Tr. E.		22	38	
I. Sh. E.		23	42	
I. Oc. D.	17	17	27	
I. Ec. R.		20	48	51·4
II. Tr. I.	18	7	3	
II. Sh. I. †		9	9	
II. Tr. E. *		9	59	
II. Sh. E.		12	5	
I. Tr. I.		14	47	
I. Sh. I.		15	51	
I. Tr. E.		17	8	
I. Sh. E.		18	11	
III. Oc. D.	19	11	19	
I. Oc. D.		11	57	
III. Oc. R.		15	2	
I. Ec. R.		15	17	39·5
III. Ec. D.		15	39	0·9
III. Ec. R.		19	8	40·7
IV. Oc. D.	19	22	19	
II. Oc. D.	20	2	9	
IV. Oc. R.		3	13	
II. Ec. R.		7	5	36·8
IV. Ec. D. †		8	23	36·5
I. Tr. I. †		9	17	
I. Sh. I. †		10	20	
I. Tr. E.		11	37	
I. Sh. E.		12	39	
IV. Ec. R.		12	54	26·1
I. Oc. D.	21	6	27	
I. Ec. R. *		9	46	21·5
II. Tr. I.		20	26	
II. Sh. I.		22	28	
II. Tr. E.		23	22	
II. Sh. E.	22	1	23	
I. Tr. I.		3	47	
I. Sh. I.		4	48	
I. Tr. E.		6	7	
I. Sh. E.		7	8	
I. Oc. D.	23	0	57	
III. Tr. I.		1	21	
I. Ec. R.		4	15	10·7
III. Tr. E.		5	4	
III. Sh. I.		5	17	
III. Sh. E. †		8	56	
II. Oc. D.		15	31	
II. Ec. R.		20	23	4·4
I. Tr. I.		22	17	
I. Sh. I.		23	17	
I. Tr. E.	24	0	37	
I. Sh. E.		1	36	
I. Oc. D.		19	27	
I. Ec. R.		22	43	54·0
II. Tr. I. *	25	9	49	
II. Sh. I.		11	46	
II. Tr. E.		12	45	
II. Sh. E.		14	41	
I. Tr. I.	25	16	47	
I. Sh. I.		17	45	
I. Tr. E.		19	7	
I. Sh. E.		20	5	
I. Oc. D.	26	13	57	
III. Oc. D.		15	37	
I. Ec. R.		17	12	41·7
III. Oc. R.		19	19	
III. Ec. D.		19	38	11·0
III. Ec. R.		23	7	30·4
II. Oc. D.	27	4	53	
II. Ec. R. *		9	40	28·0
I. Tr. I.		11	16	
I. Sh. I.		12	14	
I. Tr. E.		13	37	
I. Sh. E.		14	34	
IV. Tr. I.	28	6	32	
I. Oc. D. †		8	27	
IV. Tr. E.		11	26	
I. Ec. R.		11	41	23·0
IV. Sh. I.		15	35	
IV. Sh. E.		20	16	
II. Tr. I.		23	13	
II. Sh. I.	29	1	5	
II. Tr. E.		2	9	
II. Sh. E.		4	1	
I. Tr. I.		5	46	
I. Sh. I.		6	43	
I. Tr. E.		8	7	
I. Sh. E. †		9	2	
I. Oc. D.	30	2	57	
III. Tr. I.		5	40	
I. Ec. R.		6	10	11·7
III. Tr. E. †		9	22	
III. Sh. I. †		9	26	
III. Sh. E.		13	5	
II. Oc. D.		18	16	
II. Ec. R.		22	57	49·5

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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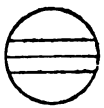
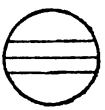
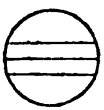
MEAN TIME.

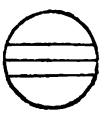
JUNE.

Phases of the Eclipses of the Satellites for an inverting Telescope.

I. 

III. 

II. 

IV. 

JULY.

	d	h	m	s
I. Tr. I.	1	0	16	
I. Sh. I.		1	11	
I. Tr. E.		2	36	
I. Sh. E.		3	31	
I. Oc. D.		21	27	
I. Ec. R.	2	0	38	54·3
II. Tr. I.		12	36	
II. Sh. I.		14	23	
II. Tr. E.		15	32	
II. Sh. E.		17	18	
I. Tr. I.		18	46	
I. Sh. I.		19	40	
I. Tr. E.		21	6	
I. Sh. E.		22	0	
I. Oc. D.	3	15	57	
I. Ec. R.		19	7	41·6
III. Oc. D.		19	57	
III. Ec. R.	4	3	6	49·0
II. Oc. D.		7	39	
II. Ec. R.		12	15	8·6
I. Tr. I.		13	16	
I. Sh. I.		14	9	
I. Tr. E.		15	36	
I. Sh. E.		16	28	
I. Oc. D.	5	10	27	
I. Ec. R.		13	36	22·1
II. Tr. I.	6	2	0	
II. Sh. I.		3	42	
II. Tr. E.	6	4	57	
II. Sh. E.		6	37	
I. Tr. I.		7	46	
I. Sh. I. †		8	37	
I. Tr. E. †		10	6	
I. Sh. E.		10	57	
IV. Oc. D.		18	13	
IV. Oc. R.		23	6	
IV. Ec. D.	7	2	25	30·4
I. Oc. D.		4	57	
IV. Ec. R.		6	53	10·3
I. Ec. R.		8	5	9·9
III. Tr. I. †		10	1	
III. Sh. I.		13	25	
III. Tr. E.		13	43	
III. Sh. E.		17	3	
II. Oc. D.		21	1	
II. Ec. R.	8	1	32	24·6
I. Tr. I.		2	16	
I. Sh. I.		3	6	
I. Tr. E.		4	36	
I. Sh. E.		5	25	
I. Oc. D.		23	27	
I. Ec. R.	9	2	33	51·9
II. Tr. I.		15	24	
II. Sh. I.		17	0	
II. Tr. E.		18	21	
II. Sh. E.		19	56	
I. Tr. I.		20	46	
I. Sh. I.	9	21	34	
I. Tr. E.		23	6	
I. Sh. E.		23	54	
I. Oc. D.	10	17	58	
I. Ec. R.		21	2	38·7
III. Oc. D.	11	0	20	
III. Ec. R.		7	5	50·1
II. Oc. D.		10	24	
II. Ec. R.		14	49	38·8
I. Tr. I.		15	16	
I. Sh. I.		16	3	
I. Tr. E.		17	36	
I. Sh. E.		18	23	
I. Oc. D.	12	12	28	
I. Ec. R.		15	31	18·3
II. Tr. I.	13	4	49	
II. Sh. I.		6	19	
II. Tr. E.		7	45	
II. Sh. E. †		9	14	
I. Tr. I. †		9	46	
I. Sh. I.		10	32	
I. Tr. E.		12	6	
I. Sh. E.		12	51	
I. Oc. D.	14	6	58	
I. Ec. R.		10	0	5·4
III. Tr. I.		14	23	
III. Sh. I.		17	24	
III. Tr. E.		18	5	

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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MEAN TIME.

JULY.

	d	h	m	s
III. Sh. E.	14	21	2	
II. Oc. D.		23	48	
IV. Tr. I.	15	2	37	
II. Ec. R.		4	6	49·5
I. Tr. I.		4	16	
I. Sh. I.		5	0	
I. Tr. E.		6	36	
I. Sh. E.		7	20	
IV. Tr. E.		7	28	
IV. Sh. I. †		9	36	
IV. Sh. E.		14	14	
I. Oc. D.	16	1	28	
I. Ec. R.		4	28	46·5
II. Tr. I.		18	13	
II. Sh. I.		19	37	
II. Tr. E.		21	9	
II. Sh. E.		22	32	
I. Tr. I.		22	46	
I. Sh. I.		23	29	
I. Tr. E.	17	1	6	
I. Sh. E.		1	48	
I. Oc. D.		19	58	
I. Ec. R.		22	57	32·4
III. Oc. D.	18	4	44	
III. Ec. R.		11	5	15·8
II. Oc. D.		13	11	
I. Tr. I.		17	16	
II. Ec. R.		17	23	59·4
I. Sh. I.		17	57	
I. Tr. E.		19	36	
I. Sh. E.		20	17	
I. Oc. D.	19	14	29	
I. Ec. R.		17	26	11·1
II. Tr. I.	20	7	38	
II. Sh. I. †		8	56	
II. Tr. E.		10	34	
I. Tr. I.		11	46	
II. Sh. E.	20	11	51	
I. Sh. I.		12	26	
I. Tr. E.		14	6	
I. Sh. E.		14	45	
I. Oc. D. †	21	8	59	
I. Ec. R.		11	54	57·3
III. Tr. I.		18	46	
III. Sh. I.		21	22	
III. Tr. E.		22	28	
III. Sh. E.	22	1	0	
II. Oc. D.		2	34	
I. Tr. I.		6	17	
II. Ec. R.		6	41	5·3
I. Sh. I.		6	55	
I. Tr. E. †		8	37	
I. Sh. E. †		9	14	
I. Oc. D.	23	3	29	
I. Ec. R.		6	23	37·4
IV. Oc. D.		14	28	
IV. Oc. R.		19	18	
IV. Ec. D.		20	26	56·4
II. Tr. I.		21	2	
II. Sh. I.		22	14	
II. Tr. E.		23	59	
I. Tr. I.	24	0	47	
IV. Ec. R.		0	51	8·6
II. Sh. E.		1	10	
I. Sh. I.		1	23	
I. Tr. E.		3	7	
I. Sh. E.		3	43	
I. Oc. D.		21	59	
I. Ec. R.	25	0	52	22·4
III. Oc. D.		9	9	
III. Ec. R.		15	3	58·9
II. Oc. D.		15	57	
I. Tr. I.		19	17	
I. Sh. I.		19	52	
II. Ec. R.	25	19	58	10·7
I. Tr. E.		21	37	
I. Sh. E.		22	11	
I. Oc. D.	26	16	30	
I. Ec. R.		19	21	0·1
II. Tr. I.	27	10	28	
II. Sh. I.		11	33	
II. Tr. E.		13	24	
I. Tr. I.		13	47	
I. Sh. I.		14	20	
II. Sh. E.		14	29	
I. Tr. E.		16	7	
I. Sh. I.		16	40	
I. Oc. D.	28	11	0	
I. Ec. R.		13	49	45·3
III. Tr. I.		23	12	
III. Sh. I.	29	1	21	
III. Tr. E.		2	53	
III. Sh. E.		4	58	
II. Oc. D.		5	21	
I. Tr. I. †		8	17	
I. Sh. I. †		8	49	
II. Ec. R.		9	15	12·0
I. Tr. E.		10	37	
I. Sh. E.		11	8	
I. Oc. D.	30	5	30	
I. Ec. R. †		8	18	24·4
II. Tr. I.		23	52	
II. Sh. I.	31	0	51	
I. Tr. I.		2	47	
II. Tr. I.		2	48	
I. Sh. I.		3	17	
II. Sh. E.		3	46	
I. Tr. E.		5	7	
I. Sh. E.		5	37	
IV. Tr. I.		22	58	

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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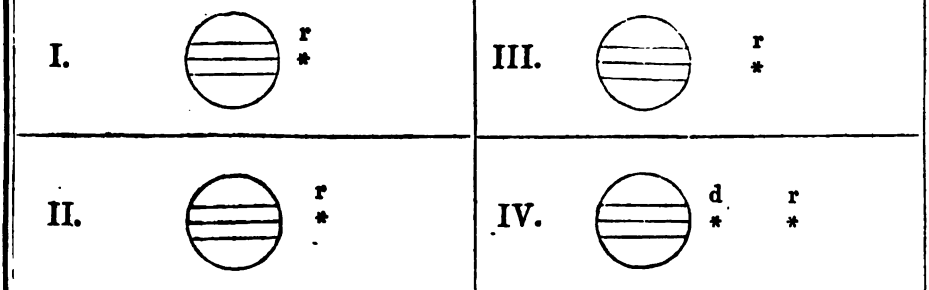
MEAN TIME.

JULY.

Phases of the Eclipses of the Satellites for an inverting Telescope.



THE SATELLITES OF JUPITER

ARE INVISIBLE DURING THE MONTHS OF AUGUST AND SEPTEMBER,

JUPITER BEING TOO NEAR TO THE SUN.

OCTOBER.

	d	h	m	s
I. Sh. I.	1	1	53	
I. Tr. I.		2	24	
I. Sh. E.		4	12	
I. Tr. E.		4	43	
II. Ec. D.		5	30	7·1
II. Oc. R.		9	22	
III. Sh. I.		13	7	
III. Tr. I.		15	12	
III. Sh. E.		16	40	
III. Tr. E.		18	46	
I. Ec. D.		23	12	52·7
I. Oc. R.	2	2	1	
I. Sh. I.		20	21	
I. Tr. I.		20	54	
I. Sh. E.		22	40	
I. Tr. E.		23	13	
II. Sh. I.	3	0	21	
II. Tr. I.		1	25	
II. Sh. E.		3	15	
II. Tr. E.		4	19	
I. Ec. D. †		17	41	26·2
I. Oc. R.		20	31	
I. Sh. I.	4	14	50	
I. Tr. I.		15	24	
I. Sh. E. *		17	9	
I. Tr. E. †		17	42	
II. Ec. D.		18	46	50·6
II. Oc. R.		22	45	
III. Ec. D.	5	3	22	59·2
III. Oc. R.		9	10	
I. Ec. D.		12	9	51·7
I. Oc. R.		15	1	
I. Sh. I.	6	9	18	
I. Tr. I.		9	54	
I. Sh. E.		11	37	
I. Tr. E.		12	12	
II. Sh. I.		13	40	
II. Tr. I.		14	50	
II. Sh. E. *		16	34	
II. Tr. E. †		17	44	
IV. Sh. I.	7	3	35	
I. Ec. D.		6	38	23·5
IV. Sh. E.		7	53	
IV. Tr. I.		9	18	
I. Oc. R.	7	9	31	
IV. Tr. E.		13	36	
I. Sh. I.	8	3	46	
I. Tr. I.		4	23	
I. Sh. E.		6	5	
I. Tr. E.		6	42	
II. Ec. D.		8	3	35·0
II. Oc. R.		12	8	
III. Sh. I. *		17	4	
III. Tr. I.		19	36	
III. Sh. E.		20	37	
III. Tr. E.		23	9	
I. Ec. D.	9	1	6	50·2
I. Oc. R.		4	1	
I. Sh. I.		22	15	
I. Tr. I.		22	53	
I. Sh. E.	10	0	34	
I. Tr. E.		1	12	
II. Sh. I.		2	57	
II. Tr. I.		4	14	
II. Sh. E.		5	51	
II. Tr. E.		7	7	

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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MEAN TIME.

OCTOBER.

	d	h	m	s
I. Ec. D.	10	19	35	22·3
I. Oc. R.		22	31	
I. Sh. I. *	11	16	43	
I. Tr. I. *		17	23	
I. Sh. E.		19	2	
I. Tr. E.		19	42	
II. Ec. D.		21	20	18·8
II. Oc. R.	12	1	31	
III. Ec. D.		7	21	34·6
III. Oc. R.		13	33	
I. Ec. D.		14	3	46·4
I. Oc. R. *		17	1	
I. Sh. I.	13	11	12	
I. Tr. I.		11	53	
I. Sh. E.		13	30	
I. Tr. E.		14	12	
II. Sh. I. *		16	16	
II. Tr. I. †		17	38	
II. Sh. E.		19	9	
II. Tr. E.		20	32	
I. Ec. D.	14	8	32	16·8
I. Oc. R.		11	31	
I. Sh. I.	15	5	40	
I. Tr. I.		6	23	
I. Sh. E.		7	59	
I. Tr. E.		8	42	
II. Ec. D.		10	37	2·9
IV. Ec. D.		14	28	49·2
II. Oc. R.		14	53	
IV. Ec. R.		18	31	12·4
III. Sh. I.		21	2	
IV. Oc. D.		21	18	
III. Tr. I.	16	0	0	
III. Sh. E.		0	35	
IV. Oc. R.		1	30	
I. Ec. D.		3	0	41·8
III. Tr. E.		3	31	
I. Oc. R.		6	1	
I. Sh. I.	17	0	8	
I. Tr. I.		0	53	
I. Sh. E.		2	27	
I. Tr. E.		3	11	
II. Sh. I.		5	33	
II. Tr. I.		7	2	
II. Sh. E.		8	26	
II. Tr. E.		9	55	

	d	h	m	s
I. Ec. D.	17	21	29	12·5
I. Oc. R.		24	31	
I. Sh. I.	18	18	36	
I. Tr. I.		19	23	
I. Sh. E.		20	55	
I. Tr. E.		21	41	
II. Ec. D.		23	53	47·9
II. Oc. R.	19	4	16	
III. Ec. D.		11	19	47·7
I. Ec. D. *		15	57	35·4
III. Oc. R. †		17	55	
I. Oc. R.		19	1	
I. Sh. I.	20	13	5	
I. Tr. I.		13	52	
I. Sh. E. †		15	24	
I. Tr. E. *		16	11	
II. Sh. I.		18	51	
II. Tr. I.		20	26	
II. Sh. E.		21	44	
II. Tr. E.		23	19	
I. Ec. D.	21	10	26	4·1
I. Oc. R.		13	31	
I. Sh. I.	22	7	33	
I. Tr. I.		8	22	
I. Sh. E.		9	52	
I. Tr. E.		10	40	
II. Ec. D.		13	10	31·9
II. Oc. R. *		17	38	
III. Sh. I.	23	1	0	
III. Tr. I.		4	21	
III. Sh. E.		4	32	
I. Ec. D.		4	54	27·8
III. Tr. E.		7	51	
I. Oc. R.		8	0	
IV. Sh. I.		21	34	
IV. Sh. E.	24	1	48	
I. Sh. I.		2	1	
I. Tr. I.		2	52	
I. Sh. E.		4	20	
I. Tr. E.		5	10	
IV. Tr. I.		5	34	
II. Sh. I.		8	8	
IV. Tr. E.		9	39	
II. Tr. I.		9	49	
II. Sh. E.		11	2	
II. Tr. E.		12	41	

	d	h	m	s
I. Ec. D.	24	23	22	57·0
I. Oc. R.	25	2	30	
I. Sh. I.		20	30	
I. Tr. I.		21	21	
I. Sh. E.		22	49	
I. Tr. E.		23	40	
II. Ec. D.	26	2	27	18·8
II. Oc. R.		7	0	
III. Ec. D. †		15	18	21·4
I. Ec. D. *		17	51	18·4
III. Ec. R. †		18	39	46·1
III. Oc. D. †		18	46	
I. Oc. R.		21	0	
III. Oc. R.		22	15	
I. Sh. I. †	27	14	58	
I. Tr. I. *		15	51	
I. Sh. E. *		17	17	
I. Tr. E. †		18	9	
II. Sh. I.		21	26	
II. Tr. I.		23	13	
II. Sh. E.	28	0	20	
II. Tr. E.		2	5	
I. Ec. D.		12	19	45·6
I. Oc. R. *		15	30	
I. Sh. I.	29	9	26	
I. Tr. I.		10	21	
I. Sh. E.		11	45	
I. Tr. E.		12	39	
II. Ec. D. *		15	44	2·8
II. Oc. R.		20	22	
III. Sh. I.	30	4	57	
I. Ec. D.		6	48	7·9
III. Sh. E.		8	29	
III. Tr. I.		8	41	
I. Oc. R.		9	59	
III. Tr. E.		12	9	
I. Sh. I.	31	3	55	
I. Tr. I.		4	50	
I. Sh. E.		6	13	
I. Tr. E.		7	8	
II. Sh. I.		10	44	
II. Tr. I.		12	35	
II. Sh. E.		13	37	
II. Tr. E. *		15	27	

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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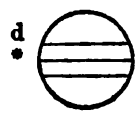
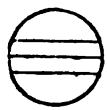
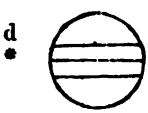
MEAN TIME.

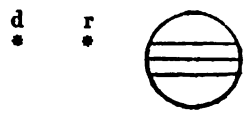
OCTOBER.

Phases of the Eclipses of the Satellites for an inverting Telescope.

I. 

III. 

II. 

IV. 

NOVEMBER.

	d	h	m	s
I. Ec. D.	1	1	16	35·6
I. Oc. R.		4	29	
IV. Ec. D.		8	27	44·8
IV. Ec. R.		12	24	47·3
IV. Oc. D. *		17	24	
IV. Oc. R.		21	21	
I. Sh. I.		22	23	
I. Tr. I.		23	20	
I. Sh. E.	2	0	42	
I. Tr. E.		1	38	
II. Ec. D.		5	0	52·0
II. Oc. R.		9	44	
III. Ec. D.		19	16	12·0
I. Ec. D.		19	44	55·9
III. Ec. R.		22	37	1·8
I. Oc. R.		22	58	
III. Oc. D.		23	5	
III. Oc. R.	3	2	33	
I. Sh. I. *		16	51	
I. Tr. I. *		17	49	
I. Sh. E.		19	10	
I. Tr. E.		20	8	
II. Sh. I.	4	0	2	
II. Tr. I.		1	58	
II. Sh. E.		2	55	
II. Tr. E.		4	50	
I. Ec. D. †		14	13	21·5
I. Oc. R. *		17	28	
I. Sh. I.	5	11	20	
I. Tr. I.	5	12	19	
I. Sh. E.		13	38	
I. Tr. E. †		14	37	
II. Ec. D. †		18	17	36·7
II. Oc. R.		23	5	
I. Ec. D.	6	8	41	42·5
III. Sh. I.		8	55	
I. Oc. R.		11	57	
III. Sh. E.		12	26	
III. Tr. I.		12	59	
III. Tr. E. *		16	26	
I. Sh. I.	7	5	48	
I. Tr. I.		6	48	
I. Sh. E.		8	7	
I. Tr. E.		9	6	
II. Sh. I.		13	19	
II. Tr. I. *		15	20	
II. Sh. E. *		16	12	
II. Tr. E. *		18	12	
I. Ec. D.	8	3	10	8·9
I. Oc. R.		6	27	
I. Sh. I.	9	0	16	
I. Tr. I.		1	18	
I. Sh. E.		2	35	
I. Tr. E.		3	36	
II. Ec. D.		7	34	29·2
II. Oc. R.		12	26	
IV. Sh. I. *		15	32	
IV. Sh. E.		19	41	
I. Ec. D.	9	21	38	28·0
III. Ec. D.		23	13	50·6
I. Oc. R.	10	0	56	
IV. Tr. I.		1	26	
III. Ec. R.		2	34	4·9
III. Oc. D.		3	22	
IV. Tr. E.		5	15	
III. Oc. R.		6	48	
I. Sh. I. †		18	45	
I. Tr. I.		19	47	
I. Sh. E.		21	3	
I. Tr. E.		22	5	
II. Sh. I.	11	2	37	
II. Tr. I.		4	42	
II. Sh. E.		5	30	
II. Tr. E.		7	33	
I. Ec. D. *		16	6	52·3
I. Oc. R.		19	26	
I. Sh. I.	12	13	13	
I. Tr. I. †		14	16	
I. Sh. E. *		15	31	
I. Tr. E. *		16	34	
II. Ec. D.		20	51	14·6
II. Oc. R.	13	1	47	
I. Ec. D.		10	35	12·1
III. Sh. I.		12	53	
I. Oc. R. †		13	55	
III. Sh. E. *		16	24	
III. Tr. I. *		17	15	

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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MEAN TIME.

NOVEMBER.

	d	h	m	s
III. Tr. E.	13	20	40	
I. Sh. I.	14	7	41	
I. Tr. I.		8	46	
I. Sh. E.		10	0	
I. Tr. E.		11	4	
II. Sh. I. *		15	54	
II. Tr. I. *		18	3	
II. Sh. E. †		18	47	
II. Tr. E.		20	54	
I. Ec. D.	15	5	3	37·2
I. Oc. R.		8	24	
I. Sh. I.	16	2	9	
I. Tr. I.		3	15	
I. Sh. E.		4	28	
I. Tr. E.		5	33	
II. Ec. D.		10	8	11·0
II. Oc. R. *		15	8	
I. Ec. D.		23	31	55·3
I. Oc. R.	17	2	54	
III. Ec. D.		3	11	19·3
III. Ec. R.		6	30	57·5
III. Oc. D.		7	36	
III. Oc. R.		11	0	
I. Sh. I.		20	38	
I. Tr. I.		21	44	
I. Sh. E.		22	56	
I. Tr. E.	18	0	2	
IV. Ec. D.		2	26	55·3
II. Sh. I.		5	11	
IV. Ec. R.		6	18	16·2
II. Tr. I.		7	25	
II. Sh. E.		8	4	
II. Tr. E.		10	16	
IV. Oc. D.		13	3	
IV. Oc. R. *		16	43	
I. Ec. D. *		18	0	18·2
I. Oc. R.		21	23	
I. Sh. I. *	19	15	6	
I. Tr. I. *	19	16	13	
I. Sh. E. *		17	25	
I. Tr. E. *		18	31	
II. Ec. D.		23	24	57·7
II. Oc. R.	20	4	28	
I. Ec. D.		12	28	36·9
I. Oc. R. *		15	52	
III. Sh. I. *		16	51	
III. Sh. E.		20	21	
III. Tr. I.		21	28	
III. Tr. E.	21	0	51	
I. Sh. I.		9	34	
I. Tr. I.		10	43	
I. Sh. E.		11	53	
I. Tr. E.		13	0	
II. Sh. I. *		18	28	
II. Tr. I.		20	46	
II. Sh. E.		21	21	
II. Tr. E.		23	36	
I. Ec. D.	22	6	57	0·8
I. Oc. R.		10	21	
I. Sh. I.	23	4	3	
I. Tr. I.		5	12	
I. Sh. E.		6	21	
I. Tr. E.		7	30	
II. Ec. D.		12	41	58·6
II. Oc. R. *		17	48	
I. Ec. D.	24	1	25	17·9
I. Oc. R.		4	50	
III. Ec. D.		7	8	51·3
III. Ec. R.		10	27	52·3
III. Oc. D.		11	48	
III. Oc. R. *		15	10	
I. Sh. I.		22	31	
I. Tr. I.		23	41	
I. Sh. E.	25	0	50	
I. Tr. E.		1	58	
II. Sh. I.		7	46	
II. Tr. I.	25	10	6	
II. Sh. E.		10	39	
II. Tr. E.		12	56	
I. Ec. D.		19	53	39·5
I. Oc. R.		23	19	
IV. Sh. I.	26	9	30	
IV. Sh. E. †		13	34	
I. Sh. I. *		16	59	
I. Tr. I. *		18	10	
I. Sh. E. †		19	18	
I. Tr. E.		20	27	
IV. Tr. I.		20	46	
IV. Tr. E.	27	0	17	
II. Ec. D.		1	58	46·5
II. Oc. R.		7	8	
I. Ec. D. *		14	21	57·1
I. Oc. R. *		17	48	
III. Sh. I.		20	49	
III. Sh. E.	28	0	18	
III. Tr. I.		1	38	
III. Tr. E.		4	59	
I. Sh. I.		11	28	
I. Tr. I.		12	39	
I. Sh. E. *		13	46	
I. Tr. E. *		14	56	
II. Sh. I.		21	3	
II. Tr. I.		23	26	
II. Sh. E.		23	56	
II. Tr. E.	29	2	16	
I. Ec. D.		8	50	20·0
I. Oc. R.		12	17	
I. Sh. I.	30	5	56	
I. Tr. I.		7	8	
I. Sh. E.		8	14	
I. Tr. E.		9	25	
II. Ec. D. *		15	15	52·5
II. Oc. R.		20	27	

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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MEAN TIME.

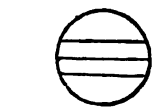
NOVEMBER.

Phases of the Eclipses of the Satellites for an inverting Telescope.

I.

III.

II.



IV.

DECEMBER.

	d	h	m	s
I. Ec. D.	1	3	18	36·2
I. Oc R.		6	46	
III. Ec. D.		11	6	54·5
III. Ec. R. *		14	25	17·8
III. Oc. D. *		15	56	
III. Oc. R. †		19	16	
I. Sh. I.	2	0	24	
I. Tr. I.		1	36	
I. Sh. E.		2	43	
I. Tr. E.		3	54	
II. Sh. I.		10	20	
II. Tr. I. †		12	46	
II. Sh. E. †		13	13	
II. Tr. E. *		15	35	
I. Ec. D.		21	46	56·7
I. Oc. R.	3	1	15	
I. Sh. I. *		18	52	
I. Tr. I.		20	5	
I. Sh. E.		21	11	
I. Tr. E.		22	22	
II. Ec. D.	4	4	32	42·2
II. Oc. R.		9	46	
I. Ec. D. *		16	15	13·4
I. Oc. R. †		19	43	
IV. Ec. D.		20	25	16·8
IV. Ec. R.	5	0	10	37·4
III. Sh. I.		0	46	
III. Sh. E.		4	15	
III. Tr. I.		5	44	
IV. Oc. D.	5	8	6	
III. Tr. E.		9	4	
IV. Oc. R.		11	26	
I. Sh. I. †		13	21	
I. Tr. I. *		14	34	
I. Sh. E. *		15	39	
I. Tr. E. *		16	51	
II. Sh. I.		23	38	
II. Tr. I.	6	2	5	
II. Sh. E.		2	30	
II. Tr. E.		4	54	
I. Ec. D.		10	43	35·3
I. Oc. R. *		14	12	
I. Sh. I.	7	7	49	
I. Tr. I.		9	3	
I. Sh. E.		10	7	
I. Tr. E.		11	20	
II. Ec. D. *		17	49	53·9
II. Oc. R.		23	4	
I. Ec. D.	8	5	11	50·9
I. Oc. R.		8	41	
III. Ec. D. *		15	4	36·6
III. Ec. R. *		18	22	21·7
III. Oc. D.		20	1	
III. Oc. R.		23	20	
I. Sh. I.	9	2	17	
I. Tr. I.		3	31	
I. Sh. E.		4	36	
I. Tr. E.		5	49	
II. Sh. I. †	9	12	55	
II. Tr. I. *		15	24	
II. Sh. E. *		15	47	
II. Tr. E. *		18	13	
I. Ec. D.		23	40	10·4
I. Oc. R.	10	3	9	
I. Sh. I.		20	46	
I. Tr. I.		22	0	
I. Sh. E.		23	4	
I. Tr. E.	11	0	17	
II. Ec. D.		7	6	45·4
II. Oc. R. †		12	23	
I. Ec. D. *		18	8	26·4
I. Oc. R.		21	38	
III. Sh. I.	12	4	43	
III. Sh. E.		8	11	
III. Tr. I.		9	47	
III. Tr. E. *		13	4	
I. Sh. I. *		15	14	
I. Tr. I. *		16	28	
I. Sh. E. *		17	32	
I. Tr. E. *		18	45	
II. Sh. I.	13	2	12	
IV. Sh. I.		3	29	
II. Tr. I.		4	42	
II. Sh. E.		5	4	
IV. Sh. E.		7	26	
II. Tr. E.		7	30	
I. Ec. D. †		12	36	47·5

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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MEAN TIME.

DECEMBER.

	d	h	m	s
IV. Tr. I. *	13	15	27	
I. Oc. R. *		16	6	
IV. Tr. E. *		18	36	
I. Sh. I.	14	9	42	
I. Tr. I.		10	57	
I. Sh. E. †		12	0	
I. Tr. E. *		13	14	
II. Ec. D.		20	24	3·0
II. Oc. R.	15	1	40	
I. Ec. D.		7	5	2·5
I. Oc. R.		10	34	
III. Ec. D. *		19	2	41·6
III. Ec. R.		22	19	47·9
III. Oc. D.	16	0	2	
III. Oc. R.		3	39	
I. Sh. I.		4	11	
I. Tr. I.		5	25	
I. Sh. E.		6	29	
I. Tr. E.		7	42	
II. Sh. I. *		15	29	
II. Tr. I. *		18	0	
II. Sh. E. *		18	21	
II. Tr. E.		20	48	
I. Ec. D.	17	1	33	21·3
I. Oc. R.		5	3	
I. Sh. I.		22	39	
I. Tr. I.		23	54	
I. Sh. E.	18	0	57	
I. Tr. E.		2	11	
II. Ec. D.		9	40	56·7
II. Oc. R. *		14	58	
I. Ec. D. †		20	1	36·9
I. Oc. R.		23	31	
III. Sh. I.	19	8	41	
III. Sh. E. †		12	8	
III. Tr. I. *		13	45	
III. Tr. E. *		17	1	
I. Sh. I. *		17	7	
I. Tr. I. *		18	22	
I. Sh. E. †		19	25	
I. Tr. E.		20	39	

	d	h	m	s
II. Sh. I.	20	4	46	
II. Tr. I.		7	17	
II. Sh. E.		7	38	
II. Tr. E.		10	4	
I. Ec. D. *		14	29	57·3
I. Oc. R. *		17	59	
I. Sh. I. †	21	11	36	
I. Tr. I. *		12	50	
I. Sh. E. *		13	54	
IV. Ec. D. *		14	23	40·0
I. Tr. E. *		15	7	
IV. Ec. R. *		18	2	37·6
II. Ec. D.		22	58	21·2
IV. Oc. D.	22	2	24	
II. Oc. R.		4	14	
IV. Oc. R.		5	21	
I. Ec. D.		8	58	12·1
I. Oc. R. *		12	27	
III. Ec. D.		23	0	7·8
III. Ec. R.	23	2	16	34·2
III. Oc. D.		3	59	
I. Sh. I.		6	4	
III. Oc. R.		7	13	
I. Tr. I.		7	18	
I. Sh. E.		8	22	
I. Tr. E.		9	35	
II. Sh. I. *		18	3	
II. Tr. I.		20	33	
II. Sh. E.		20	55	
II. Tr. E.		23	21	
I. Ec. D.	24	3	26	30·4
I. Oc. R.		6	55	
I. Sh. I.	25	0	32	
I. Tr. I.		1	46	
I. Sh. E.		2	50	
I. Tr. E.		4	3	
II. Ec. D. *		12	15	17·7
II. Oc. R. *		17	30	
I. Ec. D.		21	54	45·5
I. Oc. R.	26	1	23	
III. Sh. I. *		12	38	

	d	h	m	s
III. Sh. E. *	26	16	5	
III. Tr. I. *		17	40	
I. Sh. I. *		19	0	
I. Tr. I.		20	14	
III. Tr. E.		20	54	
I. Sh. E.		21	18	
I. Tr. E.		22	31	
II. Sh. I.	27	7	19	
II. Tr. I.		9	49	
II. Sh. E.		10	11	
II. Tr. E. *		12	36	
I. Ec. D. *		16	23	5·4
I. Oc. R. †		19	51	
I. Sh. I. *	28	13	29	
I. Tr. I. *		14	42	
I. Sh. E. *		15	47	
I. Tr. E. *		16	59	
II. Ec. D.	29	1	32	49·4
II. Oc. R.		6	46	
I. Ec. D.		10	51	20·1
I. Oc. R. *		14	19	
IV. Sh. I.		21	27	
IV. Sh. E.	30	1	18	
III. Ec. D.		2	57	25·9
III. Ec. R.		6	13	11·9
III. Oc. D.		7	52	
I. Sh. I.		7	57	
I. Tr. I.		9	10	
IV. Tr. I.		9	18	
I. Sh. E.		10	15	
III. Oc. R. †		11	4	
I. Tr. E. †		11	27	
IV. Tr. E. *		12	2	
II. Sh. I.		20	37	
II. Tr. I.		23	5	
II. Sh. E.		23	28	
II. Tr. E.	31	1	52	
I. Ec. D.		5	19	37·8
I. Oc. R.		8	47	

The abbreviations denote as follows:—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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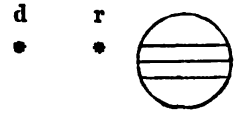
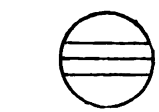
MEAN TIME.

DECEMBER.

Phases of the Eclipses of the Satellites for an inverting Telescope.

I.	III. 
II. 	IV.

The abbreviations denote as follows :—Ec. Eclipse. Oc. Occultation. Tr. Transit of Satellite. Sh. Transit of Shadow. D. Disappearance. R. Reappearance. I. Ingress. E. Egress.

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MEAN TIME.

MAY.

CONFIGURATIONS AT $8^h\ 30^m$.

Day of the Month.	*West.*	*East.*
1	·2● ○	1·4 ·3
2	.1 ○	2· 3·4
3	2· ○	1· 3· ·4
4	·2 3· ·1 ○	·4
5	3· 1○·	·2 4·
6	·1● ·3 ○	2· 4·
7	2· 1··3 ○	4·
8	·2 ○	·14· ·3
9	.1 4· ○	2· 3·
10	4· 2· ○	1· 3·
11	4· ·2 ·1 ·1 ○	
12	4· 3· ○	1· ·2
13	·4 ·3 ○	2· ●·1
14	·4 2· ·3 1· ○	
15	·4 ·2 ○	·1 ·3
16	·4 1· ○	2· 3·
17	2·○ ○	1· 3· ●·4
18	.2 ·1 3·○	·4
19	3· ○	·2 1· ·4
20	·3 ·1○	2· ·4
21	1·○ 2··3 ○	4·
22	·2 ○	·1 ·3 4·
23	1· ○	2· 3· 4·
24	○2·	1· 3·4·
25	.2 .1 ○	4· ○3·
26	3· 4· ○	1· ●·2
27	·3 4· ·1 ○	2·
28	4· ·3 2· ○1·	
29	4· ·2 ○	·3 ●·1
30	·4 1· ○	2· 3·
31	·4 ○	2··1 3·

This Table represents, at $8^h\ 30^m$ after *Mean Noon* of each day of the Month, the relative positions of the images of Jupiter and his Satellites, as they would appear (disregarding their latitudes) in an inverting telescope. Jupiter is indicated by the white circles (○) in the centre of the page; the Satellites by points. The numerals 1, 2, 3, and 4, annexed to the points, serve to distinguish the Satellites from each other; and their positions are such as to indicate the directions of the Satellites' motions, which are in all cases to be considered as *towards the numerals*. When a Satellite is at its greatest elongation, the point is placed above or below the centre of the numeral. A white circle (○) at the left or right hand of the page, denotes that the Satellite placed by the side of it is on the disc of Jupiter, and a black circle (●) that it is either *behind* the disc, or in the shadow, of Jupiter.

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MEAN TIME.

FEBRUARY.

CONFIGURATIONS AT 11h.

Day of the Month.	West.	East.
1	4· 3· ·2·1 ○	
2	·4 ·3 ○ 2· ○1·
3	·4 ·3 ○ ·1 ○2·
4	·4 ·2 1· ○ ·3
5	·4 ○ ·21· 3·
6	·4● ·1 ○ 2·3·
7	2· 3· ○ 1· ·4
8	3· ·2·1 ○ ·4
9	1·○ ·3 ○ ·2 ·4
10	2·○ ·3 ○ ·1 4·
11	·2 1· ○ ·3 4·
12	○ ·2 ·1 3· 4·
13	·1 ○ 2· 3· 4·
14	2· 3· ○ 4· 1·
15	3· 4· ·2·1 ○
16	4· ·3 ○ 1· ·2
17	4· ·3 ○ 2· ●·1
18	4· ·2 1· ○ ·3
19	·4 ○ ·2 ·1 3·
20	·4 1· ○ 2· 3·
21	·4 2· ○ 1· ○3
22	3· ·2 4 1 ○
23	·3 ○ 1··4 ·2
24	·3 ·1 ○ 2· ·4
25	1·○ 2· ○ ·3 ·4
26	·2● ○ ·1 ·3 ·4
27	1· ○ 2· 3· 4·
28	2· ○3· 1· 4·

This Table represents, at 11h after *Mean Noon* of each day of the Month, the relative positions of the images of Jupiter and his Satellites, as they would appear (disregarding their latitudes) in an inverting telescope. Jupiter is indicated by the white circles (○) in the centre of the page; the Satellites by points. The numerals, 1, 2, 3, and 4, annexed to the points, serve to distinguish the Satellites from each other; and their positions are such as to indicate the directions of the Satellites' motions, which are in all cases to be considered as *towards the numerals*. When a Satellite is at its greatest elongation, the point is placed above or below the centre of the numeral. A white circle (○) at the left or right hand of the page, denotes that the Satellite placed by the side of it is *on* the disc of Jupiter, and a black circle (●) that it is either *behind* the disc, or in the shadow, of Jupiter.

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MEAN TIME.

JANUARY.

d	h	m			°	′	
1	7	44	♄ ☌ ☾ - - - -	♄	6	12	N.
1	18	48	☿ in ♒				
8	5	39	♀ ☌ ☾ - - - -	♀	4	7	N.
9	13	48	☿ ☌ ☾ - - - -	☿	0	34	N.
10	–	–	☉ eclipsed, invis. at Green^{h}.				
11	22	53	☿ in Aphelion.				
17	3	23	♂ ☌ ☾ - - - -	♂	5	39	S.
17	22	29	♂ in ♒				
21	21	52	♅ ☌ ☾ - - - -	♅	3	45	S.
27	11	48	♃ ☌ ☾ - - - -	♃	4	8	N.
28	12	58	♄ ☌ ☾ - - - -	♄	6	13	N.
30	4	5	♂ ☌ ι Piscium	✳	(9^{m}·1)		W.
30	22	26	☿ in Sup. ☌ ☉				

FEBRUARY.

d	h	m			°	′	
1	8	53	☿ greatest Hel. Lat. S.				
2	6	38	♀ in ♒				
7	7	59	♀ ☌ ☾ - - - -	♀	0	32	S.
10	4	56	☿ ☌ ☾ - - - -	☿	5	12	S.
10	5	41	♃ ☍ ☉				
14	1	0	♅ Stationary.				
15	2	18	♂ ☌ ☾ - - - -	♂	5	2	S.
18	6	23	♅ ☌ ☾ - - - -	♅	3	39	S.
20	8	46	☿ in ♒				
23	16	14	♃ ☌ ☾ - - - -	♃	3	51	N.
24	5	13	♄ ☍ ☉				
24	19	30	♄ ☌ ☾ - - - -	♄	6	5	N.
24	22	32	☿ in Perihelion.				
26	4	33	♅ □ ☉				
27	4	26	☿ greatest elong.	18	6		E.

MARCH.

d	h	m			°	′	
5	16	42	☿ Stationary.				
7	6	30	☿ greatest Hel. Lat. N.				
8	14	6	♀ in Aphelion.				
9	18	57	♀ ☌ ☾ - - - -	♀	5	10	S.
11	18	6	☿ ☌ ☾ - - - -	☿	1	11	S.
15	14	12	☿ in Inf. ☌ ☉				
15	23	1	♂ ☌ ☾ - - - -	♂	3	50	S.
17	14	35	♅ ☌ ☾ - - - -	♅	3	24	S.
19	4	19	♆ ☌ ☉				
20	2	48	☉ enters ♈, Spring comm^{s}.				
21	18	59	☿ ☌ ♀ - - - -	☿	4	1	N.
22	22	27	♃ ☌ ☾ - - - -	♃	3	45	N.
24	3	12	♄ ☌ ☾ - - - -	♄	6	0	N.
28	1	3	☿ Stationary.				
30	18	2	☿ in ♒				
31	3	5	♀ greatest Hel. Lat. S.				

APRIL.

d	h	m			°	′	
7	13	2	♂ ☌ A^{1} Tauri	✳	(7^{m}·2)		W.
7	13	21	☿ ☌ ☾ - - - -	☿	6	38	S.
9	6	29	♀ ☌ ☾ - - - -	♀	6	56	S.
9	22	9	☿ in Aphelion.				
12	7	8	☿ greatest elong.	27	32		W.
12	15	10	♃ Stationary.				
12	15	52	♂ ☌ υ^{1} Tauri -	✳	0	9	N.
13	17	53	♂ ☌ ☾ - - - -	♂	2	17	S.
13	22	30	♅ ☌ ☾ - - - -	♅	3	5	S.
13	22	38	♂ ☌ υ^{1} Tauri -	✳	(3^{m}·6)		W.
15	15	39	♂ ☌ τ Tauri -	✳	(7^{m}·5)		E.
17	15	23	♂ ☌ ♅ - - - -	♂	1	0	N.
19	6	29	♃ ☌ ☾ - - - -	♃	3	52	N.
20	11	4	♄ ☌ ☾ - - - -	♄	6	4	N.
30	8	8	☿ greatest Hel. Lat. S.				

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MEAN TIME.

MAY.

d	h	m					
4	12	0	♄ Stationary.				
8	4	3	♃ □ ☉				
				°	′		
8	8	2	☿ ☌ ☾ - - - - ☿	6	55	S.
9	13	9	♀ ☌ ☾ - - - - ♀	4	59	S.
11	3	36	♀ in Sup. ☌ ☉			
11	6	52	♅ ☌ ☾ - - - - ♅	2	51	S.
12	11	41	♂ ☌ ☾ - - - - ♂	0	33	S.
16	16	20	♃ ☌ ☾ - - - - ♃	4	12	N.
17	18	42	♄ ☌ ☾ - - - - ♄	6	14	N.
19	8	0	☿ in ♉			
21	15	56	☿ in Sup. ☌ ☉			
23	18	8	♄ □ ☉			
23	21	48	☿ in Perihelion.			
24	18	10	☿ ☌ ♀ - - - - ☿	1	0	N.
26	9	56	♀ in ♉			
26	16	19	☿ ☌ ♅ - - - - ☿	1	13	N.
28	5	49	♀ ☌ ♅ - - - - ♀	0	5	N.

JUNE.

d	h	m					
2	8	2	♅ ☌ ☉				
3	5	48	☿ greatest Hel. Lat. N.				
				°	′		
7	16	17	♅ ☌ ☾ - - - - ♅	2	43	S.
8	17	47	♀ ☌ ☾ - - - - ♀	1	3	S.
9	3	30	☿ ☌ ε Geminor. ☍ (1^{m}.0) W.				
9	19	12	☿ ☌ ☾ - - - - ☿	1	41	N.
10	5	6	♂ ☌ ☾ - - - - ♂	1	16	N.
13	4	23	♃ ☌ ☾ - - - - ♃	4	36	N.
14	2	45	♄ ☌ ☾ - - - - ♄	6	25	N.
15	6	15	☿ ☌ ♂ - - - - ☿	0	34	N.
20	23	35	☉ enters ♋, Summer comm^{s}.				
22	16	0	♆ □ ☉				
24	17	36	☿ greatest elong.	25	27	E.	
26	17	17	☿ in ♌				
28	23	0	♀ in Perihelion.				

JULY.

d	h	m					
3	0	32	☉ in Apogee.				
				°	′		
5	2	45	♅ ☌ ☾ - - - - ♅	2	36	S.
6	21	26	☿ in Aphelion.				
7	—	—	☉ eclipsed, invis. at Green^{h}.				
7	22	5	☿ Stationary.				
8	13	25	♀ ☌ ♂ - - - - ♀	0	14	N.
8	22	30	♂ ☌ ☾ - - - - ♂	3	4	N.
8	22	58	♀ ☌ ☾ - - - - ♀	3	20	N.
9	2	36	☿ ☌ ☾ - - - - ☿	0	57	S.
10	9	25	☿ ☌ ♀ - - - - ☿	4	48	S.
10	19	0	♃ ☌ ☾ - - - - ♃	5	0	N.
11	12	25	♄ ☌ ☾ - - - - ♄	6	33	N.
11	15	30	☿ ☌ ♂ - - - - ☿	4	50	S.
20	22	2	♀ greatest Hel. Lat. N.				
21	13	42	♃ ☌ α Leonis - ☍ (5^{m}.6) W.				
22	6	0	♂ greatest Hel. Lat. N.				
22	8	35	☿ in Inf. ☌ ☉				
27	7	19	☿ greatest Hel. Lat. S.				
31	12	36	♀ ☌ α Leonis - ☍ (12^{m}.2) W.				
31	20	0	♀ ☌ ♃ - - - - ♀	0	37	N.

AUGUST.

d	h	m					
1	11	15	☿ Stationary.				
				°	′		
1	13	37	♅ ☌ ☾ - - - - ♅	2	28	S.
4	16	7	☿ ☌ ☾ - - - - ☿	1	44	S.
6	15	53	♂ ☌ ☾ - - - - ♂	4	42	N.
7	12	17	♃ ☌ ☾ - - - - ♃	5	21	N.
7	18	6	♀ ☌ ♄ - - - - ♀	0	20	S.
8	0	37	♄ ☌ ☾ - - - - ♄	6	39	N.
8	1	11	♀ ☌ ☾ - - - - ♀	6	20	N.
10	13	23	☿ greatest elong.	18	49	W.
15	7	16	☿ in ♌				
19	21	5	☿ in Perihelion.				
21	8	16	♀ ☌ β Virginis ☍ (3^{m}.8) W.				
25	19	23	♂ in Aphelion.				
26	1	56	♀ ☌ η Virginis ☍ (4^{m}.6) E.				

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MEAN TIME.

AUGUST.

d	h	m				
26	19	9	♂ ☌ ☉			
28	23	43	♅ ☌ ☾ - - - -	♅	2 14	S.
30	5	3	☿ greatest Hel. Lat. N.			
30	15	45	♃ ☌ ☉			

SEPTEMBER.

d	h	m			°	′	
2	0	9	☿ ☌ ♂ - - - -	☿	0	42	N.
2	3	23	☿ ☌ ♃ - - - -	☿	0	53	N.
2	12	0	♅ in ♋				
2	13	19	♂ ☌ ♃ - - - -	♂	0	10	N.
4	7	47	♃ ☌ ☾ - - - -	♃	5	43	N.
4	9	7	♂ ☌ ☾ - - - -	♂	5	55	N.
4	10	36	☿ in Sup. ☌ ☉				
4	15	2	☿ ☌ ☾ - - - -	☿	6	44	N.
4	15	22	♄ ☌ ☾ - - - -	♄	6	48	N.
4	17	43	☿ ☌ ♄ - - - -	☿	0	4	S.
5	0	35	♄ ☌ ☉				
6	20	46	♀ ☌ ☾ - - - -	♀	5	53	N.
8	13	43	♅ □ ☉				
11	12	56	♂ ☌ ♄ - - - -	♂	0	43	S.
14	23	25	♀ in ♋				
20	16	10	♀ ☌ λ Virginis	⚹	(9m.7)		E.
21	9	0	♅ Stationary.				
22	13	48	☉ enters ♎, Autumn comm^{s}.				
22	16	32	☿ in ♋				
22	19	0	♆ ☍ ☉				
25	7	48	♅ ☌ ☾ - - - -	♅	1 58	S.	
26	18	39	♀ ☌ α^{2} Libræ	⚹	(13m.3)		E.
29	16	29	☿ ☌ α Virginis	⚹	(13m.1)		W.

OCTOBER.

d	h	m			°	′	
2	4	23	♃ ☌ ☾ - - - -	♃	6	6	N.
2	7	39	♄ ☌ ☾ - - - -	♄	7	2	N.
2	20	42	☿ in Aphelion.				
3	2	0	♂ ☌ ☾ - - - -	♂	6	29	N.

OCTOBER.

d	h	m			°	′	
5	7	25	☿ ☌ ☾ - - - -	☿	3	12	N.
6	12	37	♀ ☌ ☾ - - - -	♀	2	31	N.
15	6	45	♀ ☌ δ Scorpii	⚹	(6m.8)		W.
18	14	12	♀ ☌ ρ Ophiuchi	⚹	(1m.7)		E.
18	22	39	♀ ☌ ρ Ophiuchi	⚹	0	5	N.
19	5	45	♀ in Aphelion.				
20	14	9	☿ greatest elong.		24	12	E.
22	13	28	♅ ☌ ☾ - - - -	♅	1	46	S.
23	6	33	☿ greatest Hel. Lat. S.				
25	4	32	♃ ☌ ♄ - - - -	♃	0	52	S.
29	23	29	♄ ☌ ☾ - - - -	♄	7	22	N.
30	0	8	♃ ☌ ☾ - - - -	♃	6	31	N.
31	18	20	♂ ☌ ☾ - - - -	♂	6	18	N.

NOVEMBER.

d	h	m					
1	4	16	☿ Stationary.				
2	4	23	☿ ☌ δ Scorpii	⚹	(9m.6)		E.
					°	′	
3	8	32	☿ ☌ ☾ - - - -	☿	0	52	N.
5	6	25	♀ ☌ ☾ - - - -	♀	1	44	S.
10	19	55	♀ greatest Hel. Lat. S.				
11	–	–	Transit of ☿, partly vis. at G^{h}.				
11	6	32	☿ in ♋				
11	19	26	☿ in Inf. ☌ ☉				
15	20	20	☿ in Perihelion.				
18	17	35	♅ ☌ ☾ - - - -	♅	1	43	S.
20	21	3	☿ Stationary.				
23	3	–	Disapp. of Saturn's Ring.				
26	4	19	☿ greatest Hel. Lat. N.				
26	12	26	♄ ☌ ☾ - - - -	♄	7	43	N.
26	16	38	♃ ☌ ☾ - - - -	♃	6	53	N.
28	22	30	☿ greatest elong.		20	10	W.
29	9	56	♂ ☌ ☾ - - - -	♂	5	25	N.
30	0	12	♂ ☌ λ Virginis	⚹	(2m.2)		W.
30	6	59	☿ ☌ ☾ - - - -	☿	6	9	N.

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DECEMBER.

d	h	m						
5	3	33	♀ ☌ ☾ - - - -	♀	5	5	S.
5	22	49	♅ ☍ ☉				
10	0	20	☿ ☌ β^2 Scorpii	☍	0	11	S.
10	10	41	☿ ☌ β^1 Scorpii	☍	(2m.5)		W.
12	15	25	♂ ☌ α^2 Libræ -	☍	(3m.2)		W.
13	19	36	♄ □ ☉				
15	21	45	♅ ☌ ☾ - - -	♅	1	49	S.
15	23	0	♀ greatest elong.		47	16	E.
16	–	–	☾ eclipsed, partly vis. at G^h.				
16	19	46	♃ ☌ β Virginis	☍	(5m.3)		W.
17	21	9	♃ □ ☉				
19	15	48	☿ in ♐				

DECEMBER.

d	h	m					
20	4	49	♆ □ ☉				
20	22	48	♀ ☌ ι Capricor.	☍	(4m.7)		W
21	7	35	☉ enters ♈, Winter comm^s.				
					°	′	
23	21	2	♄ ☌ ☾ - - - -	♄	7	57	N
24	3	58	♃ ☌ ☾ - - - -	♃	7	7	N
28	0	43	♂ ☌ ☾ - - - -	♂	3	55	N
29	5	28	♀ ☌ μ Capricor.	☍	(3m.4)		W
29	19	56	☿ in Aphelion.				
30	13	18	☿ ☌ ☾ - - - -	☿	0	59	S.
31	–	–	☉ eclipsed, vis. at Green^h.				
31	15	0	☉ in Perigee.				

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ELEMENTS FOR DETERMINING THE GEOCENTRIC POSITION, MAGNITUDE, AND APPEARANCE OF SATURN'S RING.

Mean Noon.	p	a'	b'	a''	b''	l	l'
1860.	° ′	″	″	″	″	° ′	° ′
Dec. 25	−5 46·5	42·45	− 3·98	28·23	− 2·65	− 5 22·6	− 7 52·9
1861.							
Jan. 14	5 48·8	43·78	4·36	29·12	2·90	5 42·7	7 34·5
Feb. 3	5 53·9	44·74	4·93	29·75	3·25	6 19·2	7 16·0
— 23	6 0·4	45·11	5·56	30·00	3·69	7 4·4	6 57·6
Mar. 15	6 7·0	44·81	6·09	29·80	4·05	7 48·6	6 39·2
April 4	6 12·0	43·92	6·40	29·21	4·25	8 22·4	6 20·6
— 24	6 14·9	42·63	6·42	28·35	4·27	8 39·6	6 2·0
May 14	6 15·0	41·16	6·18	27·37	4·11	8 37·8	5 43·4
June 3	6 12·2	39·72	5·71	26·41	3·80	8 16·1	5 24·5
— 23	6 6·9	38·44	5·11	25·56	3·40	7 38·5	5 6·2
July 13	5 59·3	37·41	4·41	24·88	2·93	6 46·3	4 47·6
Aug. 2	5 49·9	36·68	3·67	24·39	2·44	5 44·6	4 28·9
— 22	5 39·2	36·27	2·92	24·12	1·94	4 36·6	4 10·3
Sept. 11	5 27·8	36·20	2·17	24·07	1·45	3 26·6	3 51·6
Oct. 1	5 16·1	36·47	1·47	24·25	0·98	2 18·5	3 33·0
— 21	5 5·0	37·08	0·83	24·66	0·55	1 16·7	3 14·5
Nov. 10	4 55·4	38·01	0·29	25·28	0·19	0 26·1	2 55·7
— 15	4 53·3	38·29	0·17	25·46	0·11	0 15·3	2 51·0
— 20	4 51·4	38·59	− 0·06	25·66	− 0·04	− 0 5·5	2 46·4
— 25	4 49·6	38·90	+ 0·04	25·87	+ 0·02	+ 0 3·3	2 41·7
— 30	4 48·0	39·22	0·12	26·08	0·08	0 11·0	2 37·0
Dec. 20	4 43·7	40·62	0·34	27·01	0·23	0 29·0	2 18·3
1862.							
Jan. 9	−4 43·0	42·06	+ 0·33	27·97	+ 0·22	+ 0 26·8	− 1 59·7

p denotes the inclination of the Northern semi-minor axes of the Rings to the circle of Declination ; + East, − West.

a' the apparent outer *major* axis of the outer Ring.

b' ———— outer *minor* axis of the outer Ring ; + North surface visible, − South surface visible.

a'' ———— inner *major* axis of the inner Ring.

b'' ———— inner *minor* axis of the inner Ring.

l the elevation of the Earth above the plane of the Ring, as seen from Saturn; + North, − South.

l' the elevation of the Sun above the plane of the Ring, as seen from Saturn; + North, − South.

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Mean Time of the greatest Libration of the Moon's Apparent Disc.

	d	h	m	
Jan.	10	8	57	S.W.
	23	4	44	S.E.
Feb.	5	11	57	S.W.
	20	6	17	S.E.
Mar.	4	15	22	S.W.
	20	12	20	S.E.
Apr.	1	17	55	S.W.
	17	17	19	S.E.
	29	21	53	S.W.
May	15	14	41	S.E.
	28	2	28	S.W.
June	11	15	44	S.E.
	25	1	15	S.W.
July	7	23	25	S.E.
	22	12	38	S.W.
Aug.	4	0	42	S.E.
	18	4	18	S.W.
	31	18	20	S.E.
Sept.	13	14	34	S.W.
	28	21	6	S.E.
Oct.	11	3	11	S.W.
	27	3	50	S.E.
Nov.	8	6	12	S.W.
	24	8	50	S.E.
Dec.	6	13	22	S.W.
	22	0	36	S.E.

The Moon's Libration is here supposed to take place in the plane of her Orbit :—and by the time of the greatest Libration of her Apparent Disc is to be understood the instant at which, to an observer at the centre of the Earth, the variation of the Disc from its mean state has attained its maximum.

The right-hand column indicates the quadrant of the Moon's Disc in which the Libration takes place, and in which the greatest change of the Moon's surface will become visible.

Illuminated Portion of the Discs of Venus and Mars.

1861.	VENUS.	MARS.
Jan. 15	0·880	0·886
Feb. 14	0·932	0·908
Mar. 15	0·969	0·930
Apr. 15	0·993	0·952
May 15	1·000	0·970
June 15	0·986	0·985
July 15	0·952	0·995
Aug. 15	0·896	1·000
Sept. 15	0·825	0·999
Oct. 15	0·742	0·993
Nov. 15	0·638	0·980
Dec. 15	0·508	0·963

The numbers given in this Table represent the versed sines of the illuminated portion of the Discs, the apparent Diameters of the Planets being considered as *unity*.

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MEAN TIME OF HIGH WATER AT LONDON BRIDGE,

Reckoning from Noon of each Day.

Day of the Month	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
1	5 6	17 28	6 13	18 35	5 7	17 27	6 21	18 47	7 2	19 34	8 29	21 3
2	5 51	18 13	6 58	19 23	5 48	18 10	7 16	19 51	8 8	20 47	9 34	22 2
3	6 37	19 1	7 51	20 25	6 33	19 0	8 30	21 18	9 24	21 58	10 30	23 0
4	7 26	19 54	9 6	21 50	7 28	20 2	10 4	22 45	10 33	23 6	11 30	23 59
5	8 24	20 59	10 36	23 24	8 47	21 36	11 24	23 57	11 35	—	—	12 24
6	9 36	22 15	—	12 5	10 24	23 12	—	12 23	0 2	12 25	0 46	13 7
7	10 57	23 37	0 39	13 9	11 53	—	0 46	13 6	0 44	13 4	1 28	13 49
8	—	12 12	1 34	13 59	0 27	12 53	1 24	13 42	1 23	13 41	2 7	14 25
9	0 44	13 13	2 19	14 37	1 16	13 37	1 58	14 13	1 58	14 16	2 45	15 4
10	1 40	14 5	2 55	15 13	1 57	14 14	2 28	14 44	2 32	14 49	3 22	15 40
11	2 27	14 49	3 29	15 45	2 31	14 46	2 59	15 14	3 4	15 21	3 59	16 18
12	3 10	15 29	3 59	16 14	3 1	15 14	3 29	15 43	3 37	15 54	4 37	16 58
13	3 48	16 5	4 30	16 44	3 29	15 44	3 59	16 14	4 11	16 29	5 19	17 41
14	4 23	16 40	4 58	17 12	3 58	16 12	4 30	16 45	4 47	17 8	6 4	18 27
15	4 57	17 15	5 27	17 41	4 27	16 41	5 2	17 21	5 29	17 52	6 54	19 21
16	5 30	17 47	5 57	18 13	4 55	17 10	5 41	18 2	6 17	18 44	7 50	20 21
17	6 3	18 20	6 31	18 51	5 26	17 43	6 26	18 53	7 12	19 43	8 55	21 27
18	6 37	18 56	7 13	19 40	6 2	18 23	7 25	20 2	8 17	20 56	9 58	22 32
19	7 16	19 38	8 13	20 56	6 45	19 9	8 45	21 27	9 31	22 3	11 7	23 40
20	8 4	20 36	9 43	22 28	7 39	20 22	10 5	22 43	10 36	23 7	—	12 13
21	9 14	21 52	11 14	23 56	9 9	21 54	11 18	23 49	11 37	—	0 44	13 13
22	10 32	23 13	—	12 31	10 40	23 22	—	12 14	0 4	12 31	1 41	14 7
23	11 50	—	0 58	13 22	11 57	—	0 39	13 3	0 59	13 26	2 34	15 0
24	0 24	12 52	1 45	14 5	0 27	12 52	1 26	13 48	1 52	14 17	3 23	15 45
25	1 18	13 43	2 25	14 46	1 14	13 36	2 11	14 33	2 42	15 5	4 6	16 27
26	2 5	14 27	3 6	15 26	1 57	14 17	2 57	15 20	3 30	15 54	4 48	17 9
27	2 49	15 9	3 46	16 6	2 37	14 58	3 43	16 6	4 18	16 42	5 29	17 50
28	3 29	15 50	4 27	16 47	3 20	15 41	4 30	16 53	5 4	17 27	6 10	18 29
29	4 8	16 29	- -	- -	4 1	16 23	5 17	17 41	5 51	18 16	6 50	19 12
30	4 50	17 11	- -	- -	4 45	17 8	6 7	18 34	6 41	19 6	7 35	19 59
31	5 29	17 50	- -	- -	5 31	17 55	- -	- -	7 32	19 59	- -	- -

If the time of High Water be required, according to the *civil* mode of reckoning:

1. *For the Morning Tide:*—With the day of the month *preceding* the given date, take the time opposite thereto from the 2nd column of the month, and diminish it by 12 hours.

2. *For the Afternoon Tide:*—With the given date, take the time opposite thereto from the 1st column of the month.

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MEAN TIME OF HIGH WATER AT LONDON BRIDGE,

Reckoning from Noon of each Day.

Day of the Month	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
1	8 26	20 57	9 36	22 15	11 36	—	—	12 4	0 38	13 1	1 0	13 27
2	9 30	22 2	10 53	23 32	0 8	12 35	0 29	12 51	1 23	13 46	1 53	14 18
3	10 33	23 5	—	12 8	1 1	13 23	1 12	13 32	2 10	14 32	2 43	15 7
4	11 39	—	0 37	13 3	1 44	14 4	1 52	14 11	2 56	15 20	3 32	15 55
5	0 10	12 38	1 26	13 48	2 23	14 43	2 32	14 53	3 43	16 7	4 20	16 44
6	1 0	13 21	2 10	14 30	3 1	15 20	3 15	15 36	4 30	16 54	5 7	17 31
7	1 44	14 6	2 50	15 9	3 40	16 1	3 57	16 19	5 20	17 46	5 55	18 19
8	2 27	14 48	3 27	15 46	4 20	16 40	4 43	17 7	6 11	18 38	6 43	19 7
9	3 9	15 27	4 3	16 23	5 0	17 22	5 31	17 56	7 8	19 42	7 33	20 1
10	3 46	16 6	4 44	17 4	5 45	18 9	6 24	18 54	8 19	20 58	8 33	21 6
11	4 25	16 46	5 24	17 45	6 35	19 3	7 28	20 6	9 35	22 9	9 37	22 10
12	5 5	17 25	6 6	18 30	7 37	20 17	8 50	21 34	10 43	23 15	10 43	23 15
13	5 47	18 9	6 55	19 23	9 3	21 50	10 17	22 56	11 45	—	11 45	—
14	6 33	18 58	7 53	20 31	10 38	23 21	11 30	—	0 9	12 30	0 12	12 37
15	7 23	19 50	9 14	21 57	11 57	—	0 0	12 23	0 50	13 8	0 57	13 17
16	8 20	20 56	10 42	23 27	0 25	12 49	0 44	13 3	1 27	13 46	1 38	13 58
17	9 33	22 10	—	12 7	1 12	13 32	1 20	13 37	2 2	14 19	2 16	14 35
18	10 49	23 30	0 39	13 6	1 51	14 8	1 53	14 8	2 36	14 52	2 54	15 11
19	—	12 6	1 32	13 54	2 25	14 41	2 25	14 41	3 9	15 26	3 30	15 48
20	0 40	13 10	2 14	14 33	2 56	15 10	2 57	15 13	3 41	15 58	4 5	16 23
21	1 39	14 4	2 52	15 9	3 26	15 41	3 28	15 44	4 15	16 32	4 41	16 59
22	2 27	14 50	3 26	15 42	3 55	16 11	3 59	16 15	4 51	17 11	5 19	17 40
23	3 11	15 32	3 58	16 13	4 25	16 40	4 32	16 49	5 32	17 54	6 1	18 24
24	3 50	16 7	4 28	16 43	4 56	17 13	5 7	17 25	6 18	18 43	6 48	19 12
25	4 25	16 42	4 57	17 12	5 29	17 48	5 46	18 9	7 11	19 42	7 38	20 8
26	4 59	17 16	5 28	17 44	6 7	18 31	6 34	19 3	8 15	20 53	8 40	21 15
27	5 33	17 51	6 2	18 19	6 57	19 29	7 38	20 16	9 28	22 2	9 50	22 28
28	6 9	18 26	6 40	19 3	8 10	20 54	8 58	21 38	10 36	23 7	11 8	23 43
29	6 45	19 5	7 30	20 4	9 38	22 20	10 17	22 52	11 38	—	—	12 16
30	7 27	19 52	8 46	21 29	11 1	23 36	11 23	23 50	0 5	12 32	0 47	13 16
31	8 22	20 57	10 14	22 58	- -	- -	—	12 15	- -	- -	1 44	14 11

Example:—Required the Mean Time of High Water at London Bridge, for the Morning and Afternoon of Jan. 20, 1861.

1. Opposite the day *preceding*, viz. 19, and in the 2nd column, under JANUARY, is $19^h\ 38^m$, which, being diminished by 12^h, gives $7^h\ 38^m$ for the Time of High Water in the Morning.

2. Opposite the given date, and in the 1st column, under JANUARY, is $8^h\ 4^m$, which is the Time of High Water in the Afternoon.

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TIME OF HIGH WATER, ON THE FULL AND CHANGE OF THE MOON, AT THE UNDERMENTIONED PORTS AND PLACES.

Place.	Situation.	Time of High Water. h m
Aberdeen Bar	Scotland	1 13
Aberdovy	Wales	8 15
Aberystwith	Wales	7 31
Achill-beg	Ireland	5 14
Agnes (St.)	Scilly Isles	4 40
Air Point	Isle of Man	11 7
Aldborough	England	10 45
Alderney Pier	English Channel	6 46
Amlwch Port	Anglesea	10 30
Antwerp	Netherlands	4 25
Arran Isle	Scotland	11 15
Arundel Bar	England	11 15
Ballyshannon Bar	Ireland	5 30
Balta	Shetland	9 45
Baltimore	Ireland	4 23
Banff	Scotland	0 20
Bantry Bay	Ireland	4 14
Bardsey Island	Wales	7 45
Barmouth	Wales	7 45
Barnstaple Bar	England	5 47
Beachy Head	England	11 50
Beaumaris	Wales	10 32
Belfast	Ireland	10 43
Berwick	England	2 22
Blakeney Harbour	England	6 50
Blythe	England	2 45
Bolt Head	England	5 45
Bordeaux	France	6 50
Boston	England	7 15
Boulogne	France	11 25
Brehat Island	France	5 51
Brest Harbour	France	3 47
Bridgewater	England	6 45
Bridlington	England	4 39
Bridport	England	6 0
Brielle	Netherlands	3 0
Brighton	England	11 38
Bristol	England	7 21
Brouwershaven	Netherlands	2 0
Burnt Island	Scotland	2 30
Caermarthen Bar	Wales	6 10
Calais	France	11 49
Caldy Island	Coast of Wales	6 0
Calf of Man	St. Geo. Channel	11 5
Cancale Bay	France	6 9
Cantire (Mull)	Scotland	9 0
Cardigan Bar	Wales	7 0
Carlingford Bar	Ireland	10 40
Carnarvon Bar	Wales	9 33
Chatham	England	1 2
Chausey Islands	France	6 9
Cherbourg	France	7 49
Chichester Harbour	England	11 30
Christchurch Harbour	England	8 51
Clear Cape	Ireland	4 0
Coquet Island	England	2 45
Cordouan	France	3 37
Cork Harbour	Ireland	5 1
Cornwall Cape	England	4 30
Cowes	Isle of Wight	10 46
Cromartie	Scotland	11 55
Cuckolds Point	River Thames	2 1
Cuxhaven	Germany	0 44
Dartmouth Harbour	England	6 10
Deal	England	11 15
Dee River (Saltney)	Scotland	0 7
Devonport Dock Yard	England	5 43
Dielette Harbour	France	6 45
Dieppe	France	11 6
Dingle Bay	Ireland	3 30
Donaghadee Pier	Ireland	11 13
Donegal Bar	Ireland	5 5
Douglas Harbour	Isle of Man	11 12
Dover Pier	England	11 12
Downing Bay } Sheephaven }	Ireland	5 20
Downs (Stream)	England	2 45
Dublin Bar	Ireland	11 12
Dunbar	Scotland	2 20
Duncansby Head	Scotland	8 15
Dundalk Bar	Ireland	11 0
Dundee	Scotland	2 32
Dungarvan	Ireland	5 19
Dungeness	England	10 32
Dunkerque	France	0 13
Eddystone	English Chan.	5 25
Exmouth Bar	England	6 35
Eyemouth	Scotland	2 15
Falmouth	England	5 25
Fécamp	France	10 44
Flamboro' Head	England	4 29
Flatholm	England	6 54
Flushing	Netherlands	1 20
Fowey	England	5 30
Galloway (Mull)	Scotland	11 15
Galway Bay	Ireland	4 35
Glenan Islands	France	3 25
Goeree (West Gat.)	Holland	1 45
Granville	France	6 13
Gravelines	France	11 53

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TIME OF HIGH WATER, ON THE FULL AND CHANGE OF THE MOON, AT THE UNDERMENTIONED PORTS AND PLACES.

PLACE.	SITUATION.	Time of High Water. h m
Gravesend	England	1 14
Greenock	W.C.ofScotland	0 8
Guernsey Pier	English Channel	6 30
Gunfleet	River Thames	12 0
Hartlepool	England	3 28
Harwich	England	0 6
Hastings	England	10 53
Havre de Grace	France	9 51
Heligoland	German Ocean	11 45
Hellevoetsluis	Holland	2 0
Hollesley	England	11 30
Holyhead	Wales	10 11
Holy Island Harb.	England	2 30
Honfleur Harbour	France	9 29
Horn Point	Jutland	13 44
Howth Harbour	Ireland	11 8
Hull	England	6 29
Humber River Ent.	England	6 0
Ipswich	England	0 30
Isle de Bas	France	4 50
Jersey (St. Aubin)	English Channel	6 21
Kenmare River	Ireland	3 42
King Road	Bristol Channel	6 45
Kingstown Harb.	Ireland	11 10
Kinsale Harbour	Ireland	4 43
Kirkcudbright	Scotland	11 15
La Hougue Harb.	France	8 42
Land's End	England	4 30
Leith Pier	Scotland	2 17
Lerwick Harbour	Shetland	10 30
Lewis Islands	Scotland	6 0
Liverpool (Clarence Dock)	England	11 16
London Bridge	River Thames	2 7
Margate Pier	England	0 12
Milford Haven Ent.	Wales	5 53
Minehead Pier	England	6 30
Montrose	Scotland	2 5
Morlaix	N. C. of France	4 53
Needles Point	Isle of Wight	9 45
Newcastle	England	4 22
Newhaven	England	11 51
Newport	Wales	6 45
Nieuport	France	11 45
Nore Light (Stream)	River Thames	1 9
Orfordness	England	11 31
Ostend	Flanders	0 55
Pembroke Dock Yd.	Wales	6 12
Pentland Firth	Scotland	11 0
Penzance	England	4 30
Peterhead	Scotland	0 34
Portland Race (Stream)	England	9 15
Portland (Breakwater)	England	6 56
Port Patrick	Scotland	11 14
Portsmouth Dock Yd.	England	11 41
Ramsgate Harbour	England	11 41
Rathlin I., Church Bay	N. C.of Irel.	9 0
Rye Bay	England	11 20
Salcombe	England	6 0
Saltees	Ireland	5 40
Scalloway	Shetland	9 45
Scarborough	England	4 11
Scilly Islands	England	4 42
Selsea Harbour	England	11 46
Shannon Mouth	Ireland	3 50
Sheerness Dock Yard	England	0 37
Shields (North)	England	3 31
Shoreham Harbour	England	11 34
Skerries	Ireland	4 45
Sligo Bay, Ballisadare	Ireland	6 0
Solebay	England	10 30
Southampton	England	11 40
Spithead (Stream)	England	9 30
Spurn Point	England	5 50
St. Helen's Harbour	England	11 0
St. Ives	England	4 30
St. Malo	France	6 5
Stromness	Orkneys	9 0
Sunderland	England	3 22
Swansea Bay	Wales	6 10
Tay Bar	Scotland	2 6
Tees River Bar	England	3 30
Terschelling, West	Holland	8 40
Texel, Helder Road E. Stream	Holland	9 0
Torbay	England	6 10
Tralee Bay	Ireland	3 45
Tynemouth Bar	England	2 50
Waterford Harbour	Ireland	6 6
Wexford Harbour	Ireland	7 21
Weymouth	England	7 0
Whitby	England	3 45
Wick	Scotland	11 22
Wicklow	Ireland	10 30
Wisbeach	England	7 30
Wranger Oog	E. Friesland	12 0
Yarmouth Roads	England	9 17
Youghall	Ireland	5 14

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TABLE, SHOWING THE CORRECTION REQUIRED ON ACCOUNT OF SECOND DIFFERENCES,

In finding the Greenwich Time corresponding to a reduced Lunar Distance.

Arguments:—Approximate Interval and Difference of Proportional Logarithms.

Approximate Interval		Difference of the Proportional Logarithms in the Ephemeris.																									
		2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52
h m	h m	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s
0 0	3 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0 10	2 50	0	0	0	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	
0 20	2 40	0	1	1	1	1	2	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
0 30	2 30	0	1	1	2	2	2	2	3	3	3	4	4	5	5	5	6	6	6	7	7	7	8	8	8	9	9
0 40	2 20	0	1	1	2	2	3	3	3	4	4	5	5	6	6	6	7	7	8	8	9	9	10	10	10	11	11
0 50	2 10	1	1	2	2	3	3	4	4	5	5	5	6	6	7	7	8	8	9	9	10	10	11	12	12	13	13
1 0	2 0	1	1	2	2	3	3	4	4	5	6	6	7	7	8	8	9	9	10	10	11	12	12	13	13	14	14
1 10	1 50	1	1	2	2	3	4	4	5	5	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	15
1 20	1 40	1	1	2	3	3	4	4	5	6	6	7	7	8	9	9	10	10	11	12	12	13	14	14	15	15	16
1 30	1 30	1	1	2	3	3	4	4	5	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	16

Approximate Interval		Difference of the Proportional Logarithms in the Ephemeris.																									
		54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	
h m	h m	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	
0 0	3 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0 10	2 50	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	7	7	
0 20	2 40	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	
0 30	2 30	9	10	10	10	11	11	12	12	12	13	13	13	14	14	14	14	15	15	16	16	16	17	17	17	18	
0 40	2 20	12	12	13	13	13	14	14	15	15	16	16	16	17	17	18	18	19	19	19	20	20	21	21	22	22	
0 50	2 10	14	14	15	15	16	16	16	17	17	18	19	19	20	20	21	21	22	22	22	23	23	24	24	25	26	
1 0	2 0	15	16	16	17	17	18	18	19	19	20	21	21	22	22	23	23	24	24	25	25	26	27	27	28	28	
1 10	1 50	16	17	17	18	18	19	19	20	21	21	22	22	23	24	24	25	25	26	27	27	28	28	29	30	30	
1 20	1 40	17	17	18	19	19	20	20	21	21	22	23	23	24	25	25	26	26	27	28	28	29	29	30	31	31	
1 30	1 30	17	18	18	19	19	20	21	21	22	23	23	24	24	25	25	26	27	27	28	29	29	30	31	31	32	

Approximate Interval		Difference of the Proportional Logarithms in the Ephemeris.																									
		104	106	108	110	112	114	116	118	120	122	124	126	128	130	132	134	136	138								
h m	h m	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s	s								
0 0	3 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
0 10	2 50	7	7	7	7	7	7	8	8	8	8	8	8	8	8	9	9	9	9								
0 20	2 40	13	13	13	14	14	14	14	15	15	15	15	15	16	16	16	16	17	17								
0 30	2 30	18	18	19	19	19	20	20	20	21	21	21	22	22	22	23	23	24	24								
0 40	2 20	22	23	23	24	24	25	25	25	26	26	27	27	28	28	28	29	29	30								
0 50	2 10	26	26	27	27	28	29	29	29	30	30	31	31	32	32	33	33	34	34								
1 0	2 0	29	29	30	30	31	31	32	33	33	34	34	35	35	36	37	37	38	38								
1 10	1 50	31	31	32	32	33	34	34	35	35	36	37	37	38	38	39	40	40	41								
1 20	1 40	32	33	33	34	34	35	35	36	37	38	38	39	39	40	41	41	42	42								
1 30	1 30	32	33	34	34	35	35	36	36	37	38	39	39	40	40	41	42	42	43								

The Correction is to be *added* to the approximate Greenwich Time when the Proportional Logarithms in the Ephemeris are *decreasing*, and *subtracted* when they are *increasing*.

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TABLES FOR DETERMINING THE LATITUDE BY OBSERVATIONS OF THE POLE STAR OUT OF THE MERIDIAN.

TABLE I.

Containing the *First* Correction.

Argument:—Sidereal Time of Observation.

Sidereal Time.	Correction.	Sidereal Time.	Sidereal Time.	Correction.	Sidereal Time.
h m	° ′ ″	h m	h m	° ′ ″	h m
0 0	— 1 22 15 +	12 0	6 0	— 0 25 9 +	18 0
10	1 23 16	10	10	0 21 32	10
20	1 24 7	20	20	0 17 53	20
30	1 24 49	30	30	0 14 12	30
40	1 25 22	40	40	0 10 29	40
50	1 25 44	50	50	0 6 45	50
1 0	1 25 57	13 0	7 0	— 0 3 0 +	19 0
10	1 26 0	10	10	+ 0 0 45 —	10
20	1 25 53	20	20	0 4 30	20
30	1 25 36	30	30	0 8 15	30
40	1 25 10	40	40	0 11 58	40
50	1 24 34	50	50	0 15 40	50
2 0	1 23 48	14 0	8 0	0 19 21	20 0
10	1 22 52	10	10	0 22 59	10
20	1 21 48	20	20	0 26 35	20
30	1 20 33	30	30	0 30 7	30
40	1 19 10	40	40	0 33 36	40
50	1 17 37	50	50	0 37 1	50
3 0	1 15 56	15 0	9 0	0 40 23	21 0
10	1 14 6	10	10	0 43 39	10
20	1 12 8	20	20	0 46 50	20
30	1 10 1	30	30	0 49 56	30
40	1 7 46	40	40	0 52 57	40
50	1 5 24	50	50	0 55 51	50
4 0	1 2 54	16 0	10 0	0 58 39	22 0
10	1 0 17	10	10	1 1 20	10
20	0 57 33	20	20	1 3 55	20
30	0 54 42	30	30	1 6 22	30
40	0 51 45	40	40	1 8 41	40
50	0 48 43	50	50	1 10 52	50
5 0	0 45 34	17 0	11 0	1 12 56	23 0
10	0 42 21	10	10	1 14 51	10
20	0 39 3	20	20	1 16 38	20
30	0 35 40	30	30	1 18 15	30
40	0 32 13	40	40	1 19 44	40
50	0 28 42	50	50	1 21 4	50
6 0	— 0 25 9 +	18 0	12 0	+ 1 22 15 —	24 0

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TABLE II.

Containing the *Second* Correction. (*Always to be added.*)
Arguments:—Sidereal Time and Altitude.

Sidereal Time.	Altitude.								Sidereal Time.
	° 0	° 5	° 10	° 15	° 20	° 25	° 30	° 35	
h m	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	h m
0 0	0 0	0 0	0 1	0 1	0 2	0 3	0 3	0 4	12 0
30	0 0	0 0	0 0	0 0	0 1	0 1	0 1	0 1	30
1 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	13 0
30	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	30
2 0	0 0	0 0	0 1	0 1	0 1	0 2	0 2	0 2	14 0
30	0 0	0 1	0 1	0 2	0 3	0 4	0 5	0 6	30
3 0	0 0	0 1	0 2	0 4	0 5	0 7	0 8	0 10	15 0
30	0 0	0 2	0 4	0 6	0 8	0 10	0 13	0 15	30
4 0	0 0	0 3	0 5	0 8	0 11	0 14	0 17	0 21	16 0
30	0 0	0 3	0 7	0 10	0 14	0 18	0 22	0 27	30
5 0	0 0	0 4	0 8	0 12	0 17	0 22	0 27	0 33	17 0
30	0 0	0 5	0 9	0 14	0 19	0 25	0 31	0 37	30
6 0	0 0	0 5	0 10	0 16	0 21	0 28	0 34	0 41	18 0
30	0 0	0 5	0 11	0 17	0 23	0 29	0 36	0 44	30
7 0	0 0	0 6	0 11	0 17	0 23	0 30	0 37	0 45	19 0
30	0 0	0 6	0 11	0 17	0 23	0 30	0 37	0 45	30
8 0	0 0	0 5	0 11	0 16	0 22	0 29	0 35	0 43	20 0
30	0 0	0 5	0 10	0 15	0 21	0 26	0 33	0 40	30
9 0	0 0	0 4	0 9	0 13	0 18	0 23	0 29	0 35	21 0
30	0 0	0 4	0 8	0 11	0 16	0 20	0 25	0 30	30
10 0	0 0	0 3	0 6	0 9	0 13	0 16	0 20	0 24	22 0
30	0 0	0 2	0 5	0 7	0 10	0 12	0 15	0 18	30
11 0	0 0	0 2	0 3	0 5	0 7	0 8	0 10	0 13	23 0
30	0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 8	30
12 0	0 0	0 0	0 0	0 1	0 2	0 3	0 3	0 4	24 0

TABLE III. (*for* 1861.)

Containing the *Third* Correction. (*always to be added.*)
Arguments:—Sidereal Time and Date.

Sidereal Time.	Jan. 1.	Feb. 1.	March 1.	April 1.	May 1.	June 1.	July 1.
h	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″
0	1 35	1 32	1 25	1 16	1 8	1 4	1 6
2	1 31	1 33	1 30	1 21	1 12	1 4	1 1
4	1 18	1 25	1 26	1 21	1 13	1 3	0 56
6	1 1	1 10	1 15	1 15	1 10	1 1	0 52
8	0 43	0 52	1 0	1 5	1 5	0 59	0 50
10	0 30	0 37	0 46	0 54	0 58	0 57	0 51
12	0 25	0 28	0 35	0 44	0 52	0 56	0 54
14	0 29	0 27	0 30	0 39	0 48	0 56	0 59
16	0 42	0 35	0 34	0 39	0 47	0 57	1 4
18	0 59	0 50	0 45	0 45	0 50	0 59	1 8
20	1 17	1 8	1 0	0 55	0 55	1 1	1 10
22	1 30	1 23	1 14	1 6	1 2	1 3	1 9
24	1 35	1 32	1 25	1 16	1 8	1 4	1 6

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TABLE II.

Containing the *Second* Correction. (*always to be added.*)
Arguments:—Sidereal Time and Altitude.

Sidereal Time.	Altitude. 35°	40°	45°	50°	55°	60°	65°	70°	Sidereal Time.
h m	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	h m
0 0	0 4	0 5	0 6	0 7	0 8	0 10	0 12	0 15	12 0
30	0 1	0 1	0 2	0 2	0 3	0 3	0 4	0 5	30
1 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	13 0
30	0 0	0 0	0 1	0 1	0 1	0 1	0 1	0 2	30
2 0	0 2	0 3	0 3	0 4	0 5	0 6	0 7	0 9	14 0
30	0 6	0 7	0 8	0 9	0 11	0 14	0 17	0 22	30
3 0	0 10	0 12	0 14	0 17	0 20	0 25	0 31	0 39	15 0
30	0 15	0 18	0 22	0 26	0 31	0 38	0 47	1 0	30
4 0	0 21	0 25	0 30	0 36	0 43	0 52	1 4	1 22	16 0
30	0 27	0 32	0 38	0 46	0 55	1 7	1 22	1 46	30
5 0	0 33	0 39	0 46	0 55	1 6	1 20	1 40	2 8	17 0
30	0 37	0 45	0 53	1 4	1 16	1 33	1 55	2 27	30
6 0	0 41	0 50	0 59	1 10	1 24	1 42	2 7	2 42	18 0
30	0 44	0 53	1 3	1 15	1 30	1 49	2 15	2 52	30
7 0	0 45	0 54	1 4	1 16	1 32	1 51	2 18	2 57	19 0
30	0 45	0 54	1 4	1 16	1 31	1 51	2 17	2 56	30
8 0	0 43	0 51	1 1	1 13	1 28	1 49	2 11	2 48	20 0
30	0 40	0 47	0 57	1 7	1 21	1 40	2 1	2 36	30
9 0	0 35	0 42	0 50	1 0	1 12	1 27	1 48	2 18	21 0
30	0 30	0 36	0 43	0 51	1 1	1 14	1 32	1 58	30
10 0	0 24	0 29	0 35	0 41	0 49	1 0	1 14	1 35	22 0
30	0 18	0 22	0 26	0 31	0 37	0 45	0 56	1 12	30
11 0	0 13	0 15	0 18	0 22	0 26	0 31	0 39	0 50	23 0
30	0 8	0 9	0 11	0 13	0 16	0 19	0 24	0 30	30
12 0	0 4	0 5	0 6	0 7	0 8	0 10	0 12	0 15	24 0

TABLE III. (*for* 1861.)

Containing the *Third* Correction. (*always to be added.*)
Arguments:—Sidereal Time and Date.

Sidereal Time.	July 1.	Aug. 1.	Sept. 1.	Oct. 1.	Nov. 1.	Dec. 1.	Dec. 31.
h	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″
0	1 6	1 12	1 22	1 34	1 45	1 53	1 56
2	1 1	1 2	1 8	1 18	1 29	1 39	1 47
4	0 56	0 52	0 52	0 56	1 5	1 15	1 25
6	0 52	0 43	0 38	0 36	0 40	0 47	0 56
8	0 50	0 39	0 29	0 23	0 20	0 22	0 28
10	0 51	0 41	0 29	0 19	0 11	0 7	0 9
12	0 54	0 48	0 38	0 26	0 15	0 7	0 4
14	0 59	0 58	0 52	0 42	0 31	0 21	0 13
16	1 4	1 8	1 8	1 4	0 55	0 45	0 35
18	1 8	1 17	1 22	1 24	1 20	1 13	1 4
20	1 10	1 21	1 31	1 37	1 40	1 38	1 32
22	1 9	1 19	1 31	1 41	1 49	1 53	1 51
24	1 6	1 12	1 22	1 34	1 45	1 53	1 56

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TABLE

For converting INTERVALS of MEAN SOLAR Time into Equivalent INTERVALS of SIDEREAL Time.

HOURS.		MINUTES.				SECONDS.			
Hours of Mean Time.	Equivalents in Sidereal Time.	Minutes of Mean Time.	Equivalents in Sidereal Time.	Minutes of Mean Time.	Equivalents in Sidereal Time.	Seconds of Mean Time.	Equivalents in Sidereal Time.	Seconds of Mean Time.	Equivalents in Sidereal Time.
	h m s		m s		m s		s		s
1	1 0 9·8565	1	1 0·1643	31	31 5·0925	1	1·0027	31	31·0849
2	2 0 19·7130	2	2 0·3286	32	32 5·2568	2	2·0055	32	32·0876
3	3 0 29·5694	3	3 0·4928	33	33 5·4211	3	3·0082	33	33·0904
4	4 0 39·4259	4	4 0·6571	34	34 5·5853	4	4·0110	34	34·0931
5	5 0 49·2824	5	5 0·8214	35	35 5·7496	5	5·0137	35	35·0958
6	6 0 59·1388	6	6 0·9857	36	36 5·9139	6	6·0164	36	36·0986
7	7 1 8·9953	7	7 1·1499	37	37 6·0782	7	7·0192	37	37·1013
8	8 1 18·8518	8	8 1·3142	38	38 6·2424	8	8·0219	38	38·1040
9	9 1 28·7083	9	9 1·4785	39	39 6·4067	9	9·0246	39	39·1068
10	10 1 38·5647	10	10 1·6428	40	40 6·5710	10	10·0274	40	40·1095
11	11 1 48·4212	11	11 1·8070	41	41 6·7353	11	11·0301	41	41·1123
12	12 1 58·2777	12	12 1·9713	42	42 6·8995	12	12·0329	42	42·1150
13	13 2 8·1342	13	13 2·1356	43	43 7·0638	13	13·0356	43	43·1177
14	14 2 17·9906	14	14 2·2998	44	44 7·2281	14	14·0383	44	44·1205
15	15 2 27·8471	15	15 2·4641	45	45 7·3924	15	15·0411	45	45·1232
16	16 2 37·7036	16	16 2·6284	46	46 7·5566	16	16·0438	46	46·1259
17	17 2 47·5600	17	17 2·7927	47	47 7·7209	17	17·0465	47	47·1287
18	18 2 57·4165	18	18 2·9569	48	48 7·8852	18	18·0493	48	48·1314
19	19 3 7·2730	19	19 3·1212	49	49 8·0495	19	19·0520	49	49·1342
20	20 3 17·1295	20	20 3·2855	50	50 8·2137	20	20·0548	50	50·1369
21	21 3 26·9859	21	21 3·4498	51	51 8·3780	21	21·0575	51	51·1396
22	22 3 36·8424	22	22 3·6140	52	52 8·5423	22	22·0602	52	52·1424
23	23 3 46·6989	23	23 3·7783	53	53 8·7066	23	23·0630	53	53·1451
24	24 3 56·5554	24	24 3·9426	54	54 8·8708	24	24·0657	54	54·1479
		25	25 4·1069	55	55 9·0351	25	25·0685	55	55·1506
		26	26 4·2711	56	56 9·1994	26	26·0712	56	56·1533
		27	27 4·4354	57	57 9·3637	27	27·0739	57	57·1561
		28	28 4·5997	58	58 9·5279	28	28·0767	58	58·1588
		29	29 4·7640	59	59 9·6922	29	29·0794	59	59·1615
		30	30 4·9282	60	60 9·8565	30	30·0821	60	60·1643

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TABLE

For converting INTERVALS of MEAN SOLAR Time into Equivalent INTERVALS of SIDEREAL Time.

FRACTIONS OF A SECOND.

Seconds of Mean Time.	Equivalents in Sidereal Time.	Seconds of Mean Time.	Equivalents in Sidereal Time.	Seconds of Mean Time.	Equivalents in Sidereal Time.
	s		s		s
0·01	0·01003	0·34	0·34093	0·67	0·67183
0·02	0·02006	0·35	0·35096	0·68	0·68186
0·03	0·03008	0·36	0·36099	0·69	0·69189
0·04	0·04011	0·37	0·37101	0·70	0·70192
0·05	0·05014	0·38	0·38104	0·71	0·71194
0·06	0·06016	0·39	0·39107	0·72	0·72197
0·07	0·07019	0·40	0·40110	0·73	0·73200
0·08	0·08022	0·41	0·41112	0·74	0·74203
0·09	0·09025	0·42	0·42115	0·75	0·75205
0·10	0·10027	0·43	0·43118	0·76	0·76208
0·11	0·11030	0·44	0·44120	0·77	0·77211
0·12	0·12033	0·45	0·45123	0·78	0·78214
0·13	0·13036	0·46	0·46126	0·79	0·79216
0·14	0·14038	0·47	0·47129	0·80	0·80219
0·15	0·15041	0·48	0·48131	0·81	0·81222
0·16	0·16044	0·49	0·49134	0·82	0·82225
0·17	0·17047	0·50	0·50137	0·83	0·83227
0·18	0·18049	0·51	0·51140	0·84	0·84230
0·19	0·19052	0·52	0·52142	0·85	0·85233
0·20	0·20055	0·53	0·53145	0·86	0·86235
0·21	0·21057	0·54	0·54148	0·87	0·87238
0·22	0·22060	0·55	0·55151	0·88	0·88241
0·23	0·23063	0·56	0·56153	0·89	0·89244
0·24	0·24066	0·57	0·57156	0·90	0·90246
0·25	0·25068	0·58	0·58159	0·91	0·91249
0·26	0·26071	0·59	0·59162	0·92	0·92252
0·27	0·27074	0·60	0·60164	0·93	0·93255
0·28	0·28077	0·61	0·61167	0·94	0·94257
0·29	0·29079	0·62	0·62170	0·95	0·95260
0·30	0·30082	0·63	0·63173	0·96	0·96263
0·31	0·31085	0·64	0·64175	0·97	0·97266
0·32	0·32088	0·65	0·65178	0·98	0·98268
0·33	0·33090	0·66	0·66181	0·99	0·99271

This TABLE is useful for the conversion of MEAN SOLAR into SIDEREAL Time.

Sidereal Time *required* = Sidereal Time at the *preceding* Mean Noon + the Equivalent to the *given* Mean Time.

EXAMPLE.—To convert $2^h\ 22^m\ 25^s{\cdot}62$ Mean Time at Greenwich, Jan. 7, 1861, into Sidereal Time.

		h	m	s
Sidereal Time at the *preceding* Mean Noon, viz. January 7		19	8	7·67
For Mean Intervals:	$2^h\ 0^m\ 0^s$	2	0	19·713
	22 0	22		3·614
	25			25·069
	0·62			0·622
The Table gives the Equivalent Sidereal Intervals,				
The Sum is the Sidereal Time required		21	30	56·69

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TABLE

For converting INTERVALS of SIDEREAL Time into Equivalent INTERVALS of MEAN SOLAR Time.

HOURS.		MINUTES.				SECONDS.			
Hours of Sidereal Time.	Equivalents in Mean Time.	Minutes of Sidereal Time.	Equivalents in Mean Time.	Minutes of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.
	h m s		m s		m s		s		s
1	0 59 50·1704	1	0 59·8362	31	30 54·9214	1	0·9973	31	30·9154
2	1 59 40·3409	2	1 59·6723	32	31 54·7576	2	1·9945	32	31·9126
3	2 59 30·5113	3	2 59·5085	33	32 54·5937	3	2·9918	33	32·9099
4	3 59 20·6818	4	3 59·3447	34	33 54·4299	4	3·9891	34	33·9072
5	4 59 10·8522	5	4 59·1809	35	34 54·2661	5	4·9864	35	34·9045
6	5 59 1·0226	6	5 59·0170	36	35 54·1023	6	5·9836	36	35·9017
7	6 58 51·1931	7	6 58·8532	37	36 53·9384	7	6·9809	37	36·8990
8	7 58 41·3635	8	7 58·6894	38	37 53·7746	8	7·9782	38	37·8963
9	8 58 31·5340	9	8 58·5256	39	38 53·6108	9	8·9754	39	38·8935
10	9 58 21·7044	10	9 58·3617	40	39 53·4470	10	9·9727	40	39·8908
11	10 58 11·8748	11	10 58·1979	41	40 53·2831	11	10·9700	41	40·8881
12	11 58 2·0453	12	11 58·0341	42	41 53·1193	12	11·9672	42	41·8853
13	12 57 52·2157	13	12 57·8703	43	42 52·9555	13	12·9645	43	42·8826
14	13 57 42·3862	14	13 57·7064	44	43 52·7917	14	13·9618	44	43·8799
15	14 57 32·5566	15	14 57·5426	45	44 52·6278	15	14·9591	45	44·8772
16	15 57 22·7270	16	15 57·3788	46	45 52·4640	16	15·9563	46	45·8744
17	16 57 12·8975	17	16 57·2150	47	46 52·3002	17	16·9536	47	46·8717
18	17 57 3·0679	18	17 57·0511	48	47 52·1364	18	17·9509	48	47·8690
19	18 56 53·2384	19	18 56·8873	49	48 51·9725	19	18·9481	49	48·8662
20	19 56 43·4088	20	19 56·7235	50	49 51·8087	20	19·9454	50	49·8635
21	20 56 33·5792	21	20 56·5597	51	50 51·6449	21	20·9427	51	50·8608
22	21 56 23·7497	22	21 56·3958	52	51 51·4810	22	21·9399	52	51·8580
23	22 56 13·9201	23	22 56·2320	53	52 51·3172	23	22·9372	53	52·8553
24	23 56 4·0906	24	23 56·0682	54	53 51·1534	24	23·9345	54	53·8526
		25	24 55·9044	55	54 50·9896	25	24·9318	55	54·8499
		26	25 55·7405	56	55 50·8257	26	25·9290	56	55·8471
		27	26 55·5767	57	56 50·6619	27	26·9263	57	56·8444
		28	27 55·4129	58	57 50·4981	28	27·9236	58	57·8417
		29	28 55·2490	59	58 50·3343	29	28·9208	59	58·8389
		30	29 55·0852	60	59 50·1704	30	29·9181	60	59·8362

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TABLE

For converting INTERVALS of SIDEREAL TIME into Equivalent INTERVALS of MEAN SOLAR Time.

FRACTIONS OF A SECOND.

Seconds of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.
	s		s		s
0·01	0·00997	0·34	0·33907	0·67	0·66817
0·02	0·01995	0·35	0·34904	0·68	0·67814
0·03	0·02992	0·36	0·35902	0·69	0·68812
0·04	0·03989	0·37	0·36899	0·70	0·69809
0·05	0·04986	0·38	0·37896	0·71	0·70806
0·06	0·05984	0·39	0·38894	0·72	0·71803
0·07	0·06981	0·40	0·39891	0·73	0·72801
0·08	0·07978	0·41	0·40888	0·74	0·73798
0·09	0·08975	0·42	0·41885	0·75	0·74795
0·10	0·09973	0·43	0·42883	0·76	0·75793
0·11	0·10970	0·44	0·43880	0·77	0·76790
0·12	0·11967	0·45	0·44877	0·78	0·77787
0·13	0·12965	0·46	0·45874	0·79	0·78784
0·14	0·13962	0·47	0·46872	0·80	0·79782
0·15	0·14959	0·48	0·47869	0·81	0·80779
0·16	0·15956	0·49	0·48866	0·82	0·81776
0·17	0·16954	0·50	0·49864	0·83	0·82773
0·18	0·17951	0·51	0·50861	0·84	0·83771
0·19	0·18948	0·52	0·51858	0·85	0·84768
0·20	0·19945	0·53	0·52855	0·86	0·85765
0·21	0·20943	0·54	0·53853	0·87	0·86762
0·22	0·21940	0·55	0·54850	0·88	0·87760
0·23	0·22937	0·56	0·55847	0·89	0·88757
0·24	0·23934	0·57	0·56844	0·90	0·89754
0·25	0·24932	0·58	0·57842	0·91	0·90752
0·26	0·25929	0·59	0·58839	0·92	0·91749
0·27	0·26926	0·60	0·59836	0·93	0·92746
0·28	0·27924	0·61	0·60833	0·94	0·93743
0·29	0·28921	0·62	0·61831	0·95	0·94741
0·30	0·29918	0·63	0·62828	0·96	0·95738
0·31	0·30915	0·64	0·63825	0·97	0·96735
0·32	0·31913	0·65	0·64823	0·98	0·97732
0·33	0·32910	0·66	0·65820	0·99	0·98730

This TABLE is useful for the conversion of SIDEREAL into MEAN SOLAR Time.

Mean Solar Time *required* = Mean Time at the *preceding* Sidereal Noon + the Equivalent to the *given* Sidereal Time.

EXAMPLE.—To convert $21^h\ 30^m\ 56''{\cdot}69$ Sidereal Time at Greenwich, Jan. 7, 1861, into Mean Time.

		h	m	s
Mean Time at the *preceding* Sidereal Noon, viz. - - - - - January 6 - -		4	55	0·42
For Sidereal Intervals.	$21^h\ 0^m\ 0^s$	20	56	33·579
	30 0	29	55	08·5
	56 0·69		55	8·47
				·688
The Sum is the Mean Time required, Jan. 7 - -		2	22	25·62

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LATITUDES AND LONGITUDES OF PUBLIC OBSERVATORIES.

*** The Longitudes are reckoned from the Meridian of Greenwich.

ALTONA	Lat. 53° 32′ 45″·3 N. Long. 0h 39m 46s·14 E.	*Gauss on the Latitudes of Göttingen and Altona*, page 71. (Göttingen, 1828.) *Expédition Chronométrique exécutée entre Altona et Greenwich, &c.* (St. Petersburg, 1845.)
ARMAGH	Lat. 54° 21′ 12″·7 N. Long. 0h 26m 35s·5 W.	Communicated by the Rev. Dr. Robinson.
ATHENS	Lat. 37° 58′ 20″ N. Long. 1h 34m 55s·7 E.	*Ast. Nach.* vol. xxxiii. page 197. *Ergänzungs-Heft zu den Ast. Nach.* 1849, page 151.
BERLIN	Lat. 52° 30′ 16″·7 N. Long. 0h 53m 35s·5 E.	*Berliner Astron. Jahrbuch*, 1852, page 289.
BILK	Lat. 51° 12′ 25″ N. Long. 0h 27m 5s·5 E.	*Ast. Nach.* vol. xxvii. page 300.
BONN	Lat. 50° 44′ 9″·1 N. Long. 0h 28m 27s·0 E.	*Ast. Nach.* vol. xviii. page 135.
BRESLAU	Lat. 51° 6′ 56″·0 N. Long. 1h 8m 10s·0 E.	*Berliner Astron. Jahrbuch*, 1852, page 289.
BRUSSELS	Lat. 50° 51′ 10″·7 N. Long. 0h 17m 28s·90 E.	*Annuaire de l'Observatoire de Bruxelles, pour l'An* 1837, pages 264 and 265. Communicated by G. B. Airy, Esq.
BUDA	(Ofen.) Lat. 47° 29′ 12″·2 N. Long. 1h 16m 12s·7 E.	*Mem. Ast. Soc.* vol. i. page 280. *Zach's Correspond. Astron.* vol. vii. page 263.
CAMBRIDGE	Lat. 52° 12′ 51″·6 N. Long. 0h 0m 22s·75 E.	*Cambridge Observations*, 1838. *Camb. Phil. Trans.* vol. ix. part iv.
CAMBRIDGE, U. S.	Lat. 42° 22′ 49″ N. Long. 4h 44m 32s W.	*Monthly Notices of the Royal Ast. Soc.* vol. vii. page 157.
CAPE OF GOOD HOPE	Lat. 33° 56′ 3″ S. Long. 1h 13m 55s·0 E.	*Mem. Roy. Ast. Soc.* vol. vi. page 130. Communicated by Mr. Henderson.
CHRISTIANIA	Lat. 59° 54′ 42″·4 N. Long. 0h 42m 53s·9 E.	*Ast. Nach.* vol. xii. page 283. *Berliner Astron. Jahrbuch*, 1852, page 289.

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COPENHAGEN - - -	(University.)	
	Lat. 55° 40′ 53″·0 N.	*Ast. Nach.* vol. v. page 366.
	Long. $0^h\ 50^m\ 19^s \cdot 8$ E.	*Ast. Nach.* vol. xix. page 120.
CRACOW - - - - -	Lat. 50° 3′ 50″·0 N.	*Ast. Nach.* vol. xvi. page 256.
	Long. $1^h\ 19^m\ 51^s \cdot 1$ E.	*Ast. Nach.* vol. xvi. page 352; and vol. xviii. page 392.
DORPAT - - - - -	Lat. 58° 22′ 47″·1 N.	*Struve's Astronom. Observations*, vol. vi. page 60.
	Long. $1^h\ 46^m\ 53^s \cdot 56$ E.	Communicated by Mr. Struve to the Astronomer Royal.
DUBLIN - - - - -	Lat. 53° 23′ 13″ N. Long. $0^h\ 25^m\ 22^s$ W.	*Ast. Nach.* vol. x. page 274.
DURHAM - - - - -	Lat. 54° 46′ 6″·2 N. Long. $0^h\ 6^m\ 19^s \cdot 75$ W.	Communicated by Professor Chevallier.
EDINBURGH - - - -	Lat. 55° 57′ 23″·2 N.	*Ast. Soc. Not.* vol. iii. page 201.
	Long. $0^h\ 12^m\ 43^s \cdot 6$ W.	*Mem. Ast. Soc.* vol. iv. page 568.
GENEVA - - - - -	Lat. 46° 11′ 59″·4 N.	*Mémoire sur une nouvelle détermination sur la Latitude de Genève.* By M. Gautier. (Genève, 1830.)
	Long. $0^h\ 24^m\ 37^s \cdot 7$ E.	*Ast. Nach.* vol. xx. page 7.
GEORGETOWN COLLEGE, D.C. (U.S.)		
	Lat. 38° 54′ 26″·1 N.	*Annals of the Astronomical Observatory of Georgetown College*, D.C. No. I. p. 215.
	Long. $5^h\ 8^m\ 18^s \cdot 15$ W.	*Do.* *Do.* p. 186.
GOTHA - - - - -	(Seeberg.)	
	Lat. 50° 56′ 5″ N.	*Gauss on the Latitudes of Göttingen and Altona*, page 80.
	Long. $0^h\ 42^m\ 56^s \cdot 4$ E.	*Bessel's Tabulæ Regiomontanæ*, page 2.
GÖTTINGEN - - - -	Lat. 51° 31′ 48″ N.	*Gauss on the Latitudes of Göttingen and Altona*, page 71.
	Long. $0^h\ 39^m\ 46^s \cdot 5$ E.	*Bessel's Tabulæ Regiomontanæ*, page 2.
GREENWICH - - -	Lat. 51° 28′ 38″·0 N.	Communicated by G. B. Airy, Esq.
	Long. $0^h\ 0^m\ 0^s$	
HAMBURGH - - - -	Lat. 53° 33′ 5″·0 N.	*Ast. Nach.* vol. vii. page 379.
	Long. $0^h\ 39^m\ 54^s \cdot 1$ E.	*Berliner Astron. Jahrbuch*, 1852, page 289.

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KAZAN	Lat. 55° 47′ 23″·1 N. Long. 3h 16m 26s·3 E.	*Ast. Nach.* vol. xxviii. page 47. *Conn. des Temps*, 1855, p. 376.
KÖNIGSBERG	Lat. 54° 42′ 50″·7 N. Long. 1h 22m 0s·5 E.	*Ast. Nach.* vol. xxix. p. 72. *Bessel's Tab. Regiomontanæ*, p. 2.
KREMSMUNSTER	Lat. 48° 3′ 23″·8 N. Long. 0h 56m 32s·8 E.	*Ast. Nach.* vol. xxxvii. page 271. *Ast. Nach.* vol. xxxvii. page 269.
LEIPSIC	Lat. 51° 20′ 20″·1 N. Long. 0h 49m 28s·5 E.	*Berliner Astron. Jahrbuch*, 1852, page 289.
LEYDEN	Lat. 52° 9′ 28″·2 N. Long. 0h 17m 57s·5 E.	*Ast. Nach.* vol. xvii. page 100.
LIVERPOOL	Lat. 53° 24′ 47″·8 N. Long. 0h 12m 0s·11 W.	Communicated by J. Hartnup, Esq. ——— G. B. Airy, Esq.
MADRAS	Lat. 13° 4′ 9″·2 N. Long. 5h 21m 3s·77 E.	*Taylor's Results of Ast. Obs. at the Observatory*, vol. i. 1831, pages 94 & 95. (Madras, 1832.)
MANHEIM	Lat. 49° 29′ 14″ N. Long. 0h 33m 51s·4 E.	*Zach's Correspond. Astron.* vol. i. page 193. *Ast. Nach.* vol. ii. page 398.
MARBURG	Lat. 50° 48′ 46″·9 N. Long. 0h 35m 5s·6 E.	*Ast. Nach.* vol. xx. page 27.
MARSEILLES	Lat. 43° 17′ 50″·1 N. Long. 0h 21m 29s·0 E.	*Zach's Attraction des Montagnes*, vol. ii. page 591. *Ast. Nach.* vol. iv. page 36.
MILAN	(Brera.) Lat. 45° 28′ 1″ N. Long. 0h 36m 47s·2 E.	*Zach's Correspond. Astron.* vol. v. page 300. *Ast. Nach.* vol. ix. page 312.
MODENA	Lat. 44° 38′ 53″ N. Long. 0h 43m 43s·2 E.	*Effem. Astron. di Milano* for 1829, pages 94 and 60.
MOSCOW	Lat. 55° 45′ 19″·8 N. Long. 2h 30m 16s·96 E.	*Ast. Nach.* vol. xxvii. page 215.
MUNICH	(Bogenhausen.) Lat. 48° 8′ 45″ N. Long. 0h 46m 26s·5 E.	*Ast. Nach.* vol. i. page 221. *Ast. Nach.* vol. viii. page 148.
NAPLES	(Capo di Monte.) Lat. 40° 51′ 46″·6 N. Long. 0h 57m 0s·3 E.	*Ast. Nach.* vol. v. page 294. Communicated by M. Cacciatore to Captain B. Hall, R.N.

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NICOLAEFF - - - -	Lat. 46° 58′ 20″·6 N. Long. 2h 7m 55s·1 E.	*Ast. Nach.* vol. vii. page 261. *Ast. Nach.* vol. vii. page 306.
OXFORD - - - - -	Lat. 51° 45′ 36″·0 N. Long. 0h 5m 2s·6 W.	Communicated by M. J. Johnson, Esq.
PADUA - - - - -	Lat. 45° 24′ 2″ N. Long. 0h 47m 29s·2 E.	*Ast. Nach.* vol. v. page 411. *Ast. Nach.* vol. iv. page 347.
PALERMO - - - -	Lat. 38° 6′ 44″ N. Long. 0h 53m 25s·6 E.	*Cacciatore*, in Books 7 and 8 of *Palermo Observations.* Communicated by M. Cacciatore to Captain B. Hall, R.N.
PARIS - - - - -	Lat. 48° 50′ 13″ N. Long. 0h 9m 20s·63 E.	*Conn. des Temps*, 1853, page 353. Communicated by G. B. Airy, Esq.
PETERSBURG - - -	(Academy of Sciences.) Lat. 59° 56′ 29″·7 N. Long. 2h 1m 13s·5 E.	*Description de l'Observatoire Astron. Central de Poulkova*, p. 292.
PORTSMOUTH - - -	Lat. 50° 48′ 3″ N. Long. 0h 4m 23s·9 W.	*Requisite Tables*, 3rd edit. (from Trig. Survey.)
PRAGUE - - - - -	Lat. 50° 5′ 18″·5 N. Long. 0h 57m 41s·9 E.	*Ast. Nach.* vol. viii. page 198. *Ast. Nach.* vol. iii. page 264.
PULKOWA - - - -	Lat. 59° 46′ 18″·7 N. Long. 2h 1m 18s·66 E.	*Description de l'Observatoire Astron. Central de Poulkova*, p. 290.
ROME - - - - -	(Roman College.) Lat. 41° 53′ 52″·2 N. Long. 0h 49m 54s·7 E.	*Mem. dell' Osserv. dell' Università Gregoriana del Collegio Romano*, 1851, page 17.
ST. FERNANDO, near CADIZ - - - - -	Lat. 36° 27′ 45″ N. Long. 0h 24m 49s·1 W.	*Zach's Corresp. Astron.* vol. xiv. pages 240–243. *Ast. Nach.* vol. ix. page 358.
STOCKHOLM - - - -	Lat. 59° 20′ 31″·0 N. Long. 1h 12m 14s·8 E.	*Conn. des Temps*, 1840, page 344. *Ast. Nach.* vol. xi. page 408.
TURIN - - - - -	(New Observatory.) Lat. 45° 4′ 6″ N. Long. 0h 30m 48s·4 E.	Communicated by M. Plana to Captain B. Hall, R.N.
UPSALA - - - - -	(New Observatory.) Lat. 59° 51′ 51″·5 N. Long. 1h 10m 30s E.	Communicated by Dr. Thaler.

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VENICE - - - - -	Lat. 45° 25′ 49″·5 N. Long. 0h 49m 25s·4 E.	*Berliner Astron. Jahrbuch*, 1852, page 290.
VIENNA - - - - -	Lat. 48° 12′ 35″ N. Long. 1h 5m 31s·9 E.	*Littrow's Astron. Observations*, Part viii. page 124. *Ast. Nach.* vol. iii. page 64.
WARSAW - - - -	Lat. 52° 13′ 5″·0 N. Long. 1h 24m 8s·5 E.	*Additions to Conn. des Temps*, 1846, pages 30, 31.
WASHINGTON - - -	(National Observatory.) Lat. 38° 53′ 38″·6 N. Long. 5h 8m 12s·0 W.	*Roy. Ast. Soc. Monthly Notices*, vol. x. page 180.
WILNA - - - - -	Lat. 54° 41′ 0″ N. Long. 1h 41m 11s·9 E.	*Ast. Nach.* vol. iv. page 562. *Ast. Nach.* vol. viii. page 96.

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LATITUDES AND LONGITUDES OF PRIVATE OBSERVATORIES.

Birr Castle - - - (The Earl of Rosse.)		
Lat. 53° 5′ 47″ N.	}	Communicated by the Earl of Rosse.
Long. 0h 31m 40s·9 W.		
Bradstones - - - (W. Lassell, Esq.) (Liverpool.)		
Lat. 53° 25′ 28″ N.	}	Communicated by W. Lassell, Esq.
Long. 0h 11m 38s·7 W.		
Haddenham - - - (Rev. W. R. Dawes.) (Bucks)		
Lat. 51° 45′ 54″ N.	}	Communicated by the Rev. W. R. Dawes.
Long. 0h 3m 43s·4 W.		
Hartwell - - - - (Dr. Lee.)		
Lat. 51° 48′ 36″ N.	}	Communicated by Dr. Lee.
Long. 0h 3m 24s·33 W.		
Haverhill - - - (W. W. Boreham, Esq.)		
Lat. 52° 5′ 22″·8 N.	}	Communicated by W. W. Boreham, Esq.
Long. 0h 1m 46s·4 E.		
Kensington - - - (Sir James South.)		
Lat. 51° 30′ 11″·6 N.	}	Communicated by Sir James South.
Long. 0h 0m 46s·8 W.		
Markree - - - - (E. J. Cooper, Esq.)		
Lat. 54° 10′ 31″·8 N.	}	Communicated by E. J. Cooper, Esq.
Long. 0h 33m 48s·4 W.		
Olmütz - - - - - (Herr v. Unkrechtsberg.)		
Lat. 49° 35′ 40″ N.	}	*Ast. Nach.* vol. xxxvii. page 77.
Long. 1h 9m 0s·1 E.		
Redhill - - - - (R. C. Carrington, Esq.)		
Lat. 51° 14′ 25″·3 N.	}	Communicated by R. C. Carrington, Esq.
Long. 0h 0m 41s·25 W.		
Regent's Park - - (George Bishop, Esq.)		
Lat. 51° 31′ 29″·9 N.	}	Communicated by George Bishop, Esq.
Long. 0h 0m 37s·1 W.		
Senftenberg - - - (Baron v. Senftenberg.)		
Lat. 50° 5′ 10″ N.	}	*Ast. Nach.* vol. xxxi. page 173.
Long. 1h 5m 50s·5 E.		

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LATITUDES AND LONGITUDES OF PRIVATE OBSERVATORIES.

STONE (AYLESBURY) -	(Rev. J. B. Reade.) Lat. 51° 47′ 57″·0 N. Long. 0h 3m 29s·09 W.	Communicated by the Rev. J.B. Reade.
TARN BANK - - -	(Isaac Fletcher, Esq.) Lat. 54° 39′ 13″·7 N. Long. 0h 13m 44s·52 W.	Communicated by Isaac Fletcher, Esq.
WROTTESLEY HALL -	(Lord Wrottesley.) Lat. 52° 37′ 2″·3 N. Long. 0h 8m 53s·57 W.	Communicated by Lord Wrottesley.

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EXPLANATION OF THE ARTICLES

CONTAINED IN

THE NAUTICAL ALMANAC AND ASTRONOMICAL EPHEMERIS

FOR THE YEAR 1861.

ALL the articles of the Ephemeris have been computed for Greenwich MEAN solar time; and where they are given for apparent solar or sidereal time, it has been chiefly for the convenience of astronomers. A *day* is the interval of time between the departure of any meridian from a heavenly body and its succeeding return to it, and derives its name from the body with which the motion of the meridian is compared. The interval between the departure and return of a meridian to the Sun is called a *solar* day; in the case of the Moon, the interval is called a *lunar* day; and in that of a Star, a *sidereal* day. The revolution of the Earth on its axis is always performed in the same time; and if the heavenly bodies preserved the same positions with respect to each other, the intervals between the departure and return of a meridian to each would be the same, and all days, consequently, of equal length. The Sun, (or more strictly, the Earth in its orbit,) the Moon, and the Planets are, however, in continual motion; and with velocities not only different from each other, but varying in each particular body: the length of a day, as determined by any of these bodies, is therefore a variable quantity.

Astronomers, with a view of obtaining a convenient and uniform measure of time, have recourse to a *mean solar day*, the length of which is equal to the mean or average of all the apparent solar days in a year. An imaginary Sun, called the *mean* Sun, is conceived to move uniformly in the Equator with the real Sun's *mean* motion in Right Ascension, and the interval between the departure of any meridian from the *mean* Sun and its succeeding return to it is the duration of the mean solar day. Clocks and chronometers are adjusted to mean solar time; so that a complete revolution (through 24 hours) of the hour hand of one of these machines should be performed in exactly the same interval as the revolution of the Earth on its axis with respect to the mean Sun. If the mean Sun could be observed on the meridian at the instant that the clock or chronometer indicated $0^h\ 0^m\ 0^s$, it would again be observed there when the hour hand returned to the same position. As the time deduced from observation of the *true* Sun is called *true* or *apparent* time, so the time deduced from the *mean* Sun, or indicated by the machines which represent its motion, is denominated *mean* time.

We cannot *immediately* obtain mean time from observation; but, from an observation of the true Sun, with the aid of the equation of time, which is the angular distance in time between the mean and the true Sun, we may readily deduce it. Suppose the true Sun to be observed on the meridian of Greenwich, Jan. 1, 1861; it would then be apparent noon at that meridian; the equation of time at this instant is $3^m\ 58^s{\cdot}47$, and, by the precept at the head of the column, it is "*to be added to*

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apparent time"; hence it appears that the corresponding mean time is $0^h\ 3^m\ 58^s{\cdot}47$, or that the mean Sun had passed the meridian previously to the true Sun, and that at the instant of observation the mean time clock or chronometer ought to indicate this time.

A mere inspection of the columns of the Ephemeris is, of itself, sufficient to show that the quantities are continually varying, and that some reduction is necessary where data are to be obtained for any time differing from that for which the quantities are registered. Take, for instance, the Sun's Right Ascension on Page II. of the month of January; on January 1, it is $18^h\ 48^m\ 26^s{\cdot}72$; on January 2, it is $18^h\ 52^m\ 51^s{\cdot}35$; in the course of 24 mean hours it has therefore increased by $4^m\ 24^s{\cdot}63$. If, then, the Right Ascension were required for any time between the Mean Noons of January 1 and 2, as at 6^h from Mean Noon of January 1, it would be necessary to increase the Right Ascension on January 1, by the proportional part of the daily increase due for the 6^h, viz. by one-fourth part, or $1^m\ 6^s{\cdot}16$. This would in all cases be required, even under the meridian of Greenwich, for which the quantities have been specially computed. Let a person be now supposed to be under a meridian 15° West of Greenwich. The positions of the heavenly bodies, as referred to the centre of the Earth, are independent of meridians, and are the same for all places at the same absolute instant; but the relative times at Greenwich and the assumed meridian would be different. If it were 1^h from mean noon at the one place, it could not be 1^h from mean noon at the other; for when we speak of time, we mean, as regards a visible phenomenon, the distance of the Sun *westward* from a given meridian, and at the same absolute moment of time the Sun *cannot* be at the same distance (*reckoning westward*) from two meridians which are 15° distant from each other. Before we can make use of the Ephemeris, it is therefore necessary to ascertain, in every instance, the distance of the Sun (*in time*) from the meridian of Greenwich, or what is commonly called the corresponding Greenwich time; and this is evidently equal to the given time under the assumed meridian, *increased* or *diminished* by the difference (*in time*) of the two meridians, according as the assumed meridian is to the *Westward* or *Eastward* of Greenwich. In a mean solar day or 24 mean solar hours, the Earth, by its rotation from West to East, has caused every meridian in succession from East to West to pass the mean Sun; and since the motion is uniform, all the meridians distant from each other 15° will have passed the mean Sun, at intervals of one mean hour; the meridian to the Eastward passing first, or being, as compared with the Sun, always one mean hour in advance of the Westerly meridian. When it is 6^h from mean noon at a place 15° West of Greenwich, it is therefore 7^h from mean noon at Greenwich; and it is for this Greenwich time that we must deduce the quantities required from the Ephemeris.

If a chronometer adjusted to Greenwich mean time be at hand, the Greenwich time may be immediately obtained by applying a correction, deduced from the daily rate and interval elapsed, and this will be preferable in all cases for obtaining the requisite data from the Ephemeris.

The day adopted in this Ephemeris is supposed to begin at mean noon, or at the instant when a clock or chronometer shows $0^h\ 0^m\ 0^s$, Greenwich mean time, and is continued through the 24 hours, to the following mean noon, when another day begins. It may therefore be called the *mean astronomical day*, although, in practice, astronomers begin the day at the moment the true Sun's centre is on their meridian.

In the civil, or common, method of reckoning, the day is supposed to commence at the *preceding* midnight, and to be counted only to 12 hours or noon, when the 12 hours are reckoned over again to the next midnight. The civil reckoning is therefore always

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12^h in advance of the astronomical reckoning: and the civil time corresponding to any given astronomical time is hence readily found by *adding* 12^h to the latter: thus, if to Jan. 1^d 7^h 49^m, astronomical time, be added 12^h, the sum will be Jan. 1^d 19^h 49^m, or Jan. 1^d 7^h 49^m P.M. civil time. Again, to Jan. 1^d 15^h 35^m, astronomical time, add 12^h; the sum will be Jan. 2^d 3^h 35^m A.M. civil time. It thus appears that, from noon to midnight, the day of the month and the hour of the day are the same in both methods; but from midnight to noon they differ; for at midnight, when a new civil day commences, the astronomical day wants 12^h of its completion.

The conversion of civil into astronomical time, is, on the contrary, performed by *diminishing* the former by 12^h. Thus, January 2^d 3^h 35^m A.M. civil time, diminished by 12^h, leaves January 1^d 15^h 35^m for the corresponding astronomical time.

To each month there are devoted twenty pages, distinguished by the Roman numerals I. to XX.

For convenience of interpolation, the quantities that follow next in order of succession have been added at the bottom of each page. Thus the quantities opposite to February 1 will be found inserted also opposite to January 32, the number of the days in each month having been intentionally increased for such purpose.

Page I. of each Month.

The contents of this page are adapted to *apparent noon*, or the instant when the Sun's centre is on the meridian of Greenwich. The *Sun's Right Ascension*, here given, is *affected with aberration*, and reckoned from the true equinox; it is therefore the sidereal time at apparent noon, or the time which ought to be shown by a sidereal clock, at that instant. The *Sun's Apparent Declination* is the angular distance of the Sun from the equator, measured on the meridian.

The columns entitled "Diff. for 1 hour" are intended to facilitate the reduction of the quantities from apparent noon to any other time. The values of these quantities for any proposed *mean* time will, however, be more accurately ascertained by means of the numbers on page II. from which, indeed, they have been derived.

The *Sidereal Time of the Sun's Semidiameter passing the Meridian* is useful for reducing a transit observation of either limb of the Sun, when one only has been observed, to the transit of the centre.

The *Equation of Time* is the difference between apparent and mean time, and therefore serves for the conversion of either time into the other. The numbers here given, show, for Greenwich apparent noon, the distance of the mean Sun from the meridian, or the portion of time to be *added to* or *subtracted from*, (according to the precept at the head of the column,) Greenwich apparent noon to obtain the corresponding mean time at the same meridian, or the time which ought to be shown by the mean time clock. It differs from the equation of time on page II., because the equation itself varies in the interval between apparent and mean noon.

Where time is deduced from observations of the Sun, the *immediate* result is *apparent* time; to convert it into mean time, the equation of time is necessary, and it is to be applied to apparent time, according to the precept at the head of the column.

Thus, suppose the apparent time deduced from an observation of the Sun on January 16, 1861, in longitude 45° or 3^h East of Greenwich, to be 6^h, and it were required to convert it into mean time; subtracting the difference of longitude 3^h from the apparent time at the place, we have 3^h for the corresponding apparent time at

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Greenwich. The difference of the equation for 1 hour is $0^s \cdot 830$, which, multiplied by 3, gives $2^s \cdot 490$ for the variation in 3 hours, and this being added (because the equation is increasing) to $10^m\ 10^s \cdot 16$, the equation of time at apparent noon, the result is $10^m\ 12^s \cdot 65$, to be added (according to the precept at the head of the column) to the given apparent time 6^h, whence we obtain $6^h\ 10^m\ 12^s \cdot 65$ for the mean time required.

At page I. of the month of April, we observe, at the head of the column $\frac{\text{added to}}{\text{subt. from}}$, which signifies that a change of precept occurs in the course of the month; and between the equations opposite to the 14th and 15th days of the month, a black line, indicating that the change occurs between the apparent noons of those days. The upper precept applies to all the quantities above the black line; and the lower precept to all the quantities below it: that is, in the instance referred to, the equation of time is to be *added to* apparent time from the 1st of April to the instant at which the equation becomes $0^m\ 0^s$, which happens between the noons of the 14th and 15th days of the month; but after that instant the equation is to be *subtracted* from apparent to obtain mean time.

Page II. of each Month.

The *Sun's Apparent Right Ascension* and *Declination* at mean noon have been deduced from its *apparent* Longitude and Latitude given at page III., and the *apparent* obliquity of the ecliptic at page 242. They denote the *apparent* position of the true Sun with reference to the equator, and the true equinox, at the instant the Greenwich mean time clock, or chronometer, indicates $0^h\ 0^m\ 0^s$, or when the hour angle of the true Sun is equal to the equation of time.

To find the Right Ascension and Declination for any other mean time and place, as at $9^h\ 20^m$ A.M. March 2, 1861, in longitude 98°, or $6^h\ 32^m$, West of Greenwich. The astronomical time, corresponding to $9^h\ 20^m$ A.M. March 2, is $21^h\ 20^m$ from the noon of March 1, or March $1^d\ 21^h\ 20^m$, agreeably to what has been said before. The longitude, being West of Greenwich, must be added to March $1^d\ 21^h\ 20^m$, and the result, March $2^d\ 3^h\ 52^m$, is the corresponding Greenwich mean time, for which the Right Ascension and Declination are to be found. The difference between the Right Ascensions on March 2, and March 3, is $3^m\ 43^s \cdot 74$, that is, in the 24 mean hours succeeding the mean noon of March 2, the Right Ascension has increased by this quantity; it will, therefore, have received a proportional part of the increase in $3^h\ 52^m$, and the amount is readily obtained by this proportion $24^h : 3^m\ 43^s \cdot 74 :: 3^h\ 52^m : 36^s \cdot 05$; which, being *added* to $22^h\ 53^m\ 21^s \cdot 68$, the Right Ascension at mean noon of March 2, gives $22^h\ 53^m\ 57^s \cdot 73$, for the Right Ascension at the time proposed.

In a similar manner the Declinations indicate a decrease of $22'\ 58'' \cdot 5$ in the 24 hours; therefore $24^h : 22'\ 58'' \cdot 5 :: 3^h\ 52^m : 3'\ 42'' \cdot 1$, the proportional part of the decrease for $3^h\ 52^m$, which, *subtracted* from S. $7°\ 5'\ 30'' \cdot 5$ leaves S. $7°\ 1'\ 48'' \cdot 4$ for the Declination required.

The *Semidiameter of the Sun.* The numbers in this column express the angle at the centre of the earth subtended by the Sun's semidiameter, and are required for reducing observations of the limb to the centre, as in the instance of measuring the altitude of the Sun's upper or lower limb, or the distance of the Moon from the Sun.

Equation of Time. The numbers in this column are the values of the equation at the instant of mean noon, and therefore serve more particularly to convert *mean* into *apparent* time; for which purpose we have only to apply the equation according to the precept at the head of the column. Thus, if from mean noon of April 2, or

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0^h, be subtracted the equation $3^m\ 35^s{\cdot}45$; April $1^d\ 23^h\ 56^m\ 24^s{\cdot}55$ is the corresponding apparent time. To find the equation of time at 4^h A.M. mean time on April 15, 1861, in longitude 105°, or $7^h\ 0^m$, West of Greenwich. Add the difference of longitude to the given time, because it is West, and the corresponding astronomical mean time at Greenwich is April $14^d\ 23^h\ 0^m$. The variation in 24 hours is $14^s{\cdot}96$, that is, the *sum* of the equations belonging to the noons of the 14th and 15th, because the equation has decreased to 0 and then increased in the interval, therefore

$$24^h : 14^s{\cdot}96 :: 23^h\ 0^m : 14^s{\cdot}34,$$

which, being greater than $0^m\ 14^s{\cdot}15$, the equation on the 14th, which was decreasing, shows that in the $23^h\ 0^m$ the equation has passed through its state of decrease to zero, or 0, and is now increasing. The difference $0^s{\cdot}19$ is the equation of time at the time proposed, and is to be added to mean time, because it has passed the zero.

Sidereal Time at Mean Noon is the angular distance of the first point of Aries, or the true vernal equinox, from the meridian, at the instant of mean noon: it is therefore the Right Ascension of the mean Sun, or the time which ought to be shown by a sidereal clock at Greenwich, when the mean time clock indicates $0^h\ 0^m\ 0^s$.

A sidereal clock represents the rotation of the Earth on its axis, as referred to the stars, its hour hand performing a complete revolution through the 24 hours in the interval between the departure of any meridian from a star and its next return to it. At the moment that the vernal equinox, or a star whose Right Ascension is $0^h\ 0^m\ 0^s$, is on the meridian of Greenwich, the sidereal clock ought to show $0^h\ 0^m\ 0^s$, and at the succeeding return of the star, or the equinox, to the same meridian, the clock ought to indicate the same time.

The sidereal time here given is that in common use among astronomers, and expresses the actual hour-angle from the meridian, westward, of the true equinoctial point at the moment of observation. It is therefore affected by the equation of the equinoxes; and is not, strictly speaking, a *mean* or uniformly increasing quantity. It ought, therefore, to be termed *apparent sidereal time* in the same manner as apparent solar time reckons from the actual arrival of the sun's centre on the meridian; and in like manner, as mean solar time is reckoned from the arrival of an imaginary sun, moving uniformly with its mean velocity, so *mean sidereal* time (whose expression would be simply $\frac{\odot\text{'s mean longitude}}{15}$) would be reckoned from the transit of, not the *true*, but the *mean* equinoctial point. The smallness of the fluctuations to which a clock, regulated to *apparent* sidereal time compared with one regulated to *mean* sidereal time, is subject, being at the utmost only $2^s{\cdot}3$ in a period of nineteen years, has prevented the practical inconvenience of this from being felt: no clock being sufficiently perfect to go during so long a period without frequent re-adjusting; and as the corrections applied by astronomers to the observed right ascensions of all objects are adapted to this supposed irregularity in the rate of the clock, the mean right ascensions thence deduced come out correct. It has, therefore, not been thought necessary, in this instance, to depart from received usage, however theoretically objectionable such a mode of counting time may appear, since a change in this respect would involve the necessity of a corresponding change in all tables of nutation.

The sidereal time at mean noon is useful in all cases where mean solar time is to be deduced from observations of the heavenly bodies. It serves to facilitate the reduction of sidereal to mean solar time, and *vice versâ*, by the help of the tables commonly used for that purpose called a Table of Acceleration of Sidereal on Mean

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solar time, and the corresponding Table of Retardation of Mean on Sidereal time, according to the following rule:—Convert the interval from the mean noon immediately preceding, from the denomination given, to that required; and if mean time be required, the result will at once be that which the clock should show; but if sidereal time be that sought, the result must be added to the sidereal time at the preceding mean noon.

Example:—To convert $21^h\ 9^m\ 24^s{\cdot}04$ sidereal time, January 2, 1861, into mean solar time, for the meridian of Greenwich.

	h	m	s
Sidereal time given	21	9	24·04
Sidereal time *at* mean noon, January 2	18	48	24·88
Interval in sidereal time *from* mean noon	2	20	59·16
Retardation of mean on sidereal time for the interval			− 23·10
Mean solar time required	2	20	36·06

which is the interval elapsed since mean noon, expressed in mean time; and therefore the time which ought to be shown by a mean time clock.

Vice versâ, to convert $2^h\ 20^m\ 36^s{\cdot}06$ mean solar time, January 2, 1861, into sidereal time for the same meridian.

	h	m	s
Mean interval from mean noon, January 2	2	20	36·06
Acceleration of sidereal on mean time for the interval			+ 23·10
Sidereal interval *from* mean noon	2	20	59·16
Sidereal time *at* mean noon, January 2	18	48	24·88
Sidereal time required	21	9	24·04

which ought to be the time shown by the sidereal clock at the instant in question.

If the place of observation be not on the meridian of Greenwich, the sidereal time must be corrected by the *addition* of $9^s{\cdot}8565$ for each hour (and proportional parts for the minutes and seconds) of longitude, if the place be to the west of Greenwich; but by its *subtraction*, if to the east. Thus in $9^h\ 10^m\ 6^s$ west longitude, the sidereal time at mean noon, January 2, instead of being, as in the foregoing Example, $18^h\ 48^m\ 24^s{\cdot}88$, must be corrected by adding $1^m\ 30^s{\cdot}37$, thus giving $18^h\ 49^m\ 55^s{\cdot}25$ for the time to be used, instead of that set down in the column.

The conversion of mean solar to sidereal time, and *vice versâ*, may, however, be performed, and with perhaps less liability to error, by means of this and of the column entitled *Mean Time of Transit of the First point of Aries*, at page XX. of each month, using the Tables of Time Equivalents, inserted at pages 498 to 501.

To convert mean solar into sidereal time: To the sidereal time at the *preceding* mean noon add the sidereal interval corresponding to the given mean time; the sum will be the sidereal time required. (See Example at page 499.)

To convert sidereal into mean solar time: To the mean time at the *preceding* sidereal noon, add the mean interval corresponding to the given sidereal time; the sum will be the mean solar time required. (See Example at page 501.)

In this mode of reduction there is not, as in the former, by means of the Tables of Acceleration and Retardation, any distinction of cases, all the quantities being additive.

The Tables of Time Equivalents differ from the Tables of Acceleration and Retardation, in containing the *values* of intervals of each species of time, expressed in

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terms of the other, instead of the *corrections*, respecting the proper application of which, a difficulty is sometimes felt by unpractised computers.

Sidereal time at mean noon is also used in finding the mean time of transit of a heavenly body.

Page III. of each Month.

The *Sun's Longitude*, here given, *is affected with aberration*, and reckoned from the *true* equinox: it is therefore the apparent longitude of the Sun at the instant of mean noon; or it is (if R denote the Radius Vector) the *true* Longitude of the Sun at the time $0^h - 497^s \cdot 78$ R, because aberration causes the Sun to appear behind its true place in the Ecliptic.

The *Sun's Latitude* is the angular distance of the Sun's centre from the plane of the Ecliptic, measured on a circle perpendicular to that plane.

The *Logarithm of the Radius Vector of the Earth* is the logarithm of the distance between the centre of the Earth and the *apparent* place of the centre of the Sun at mean noon, the mean distance, or the semi-axis major of the orbit, being considered unity.

These quantities are derived *immediately* from the Solar tables, and enter into indeed are the foundation of, nearly all the subsequent operations in the Ephemeris. Whenever the *true* Longitude of the Earth is required, as in calculating the Geocentric position of a Planet or Comet from its Heliocentric position, it is necessary to reduce the *apparent* Longitude of the Sun to the *true*, by correcting it for aberration. The Sun's aberration for every tenth day is given at page 242, and may thence be readily obtained for any other day of the year. (See *Sun's aberration*, page 525).

The Sun's Longitude, entering into the expressions for aberration and solar nutation, is required for the reduction of the stars' places.

The *Moon's Semidiameter* is the angle under which her Semidiameter would appear if viewed from the centre of the Earth; and her *Horizontal Parallax* is the *greatest* angle under which the Earth's equatorial semidiameter would appear if seen from the centre of the Moon. The former is requisite to obtain the position of the centre from an observation of the Moon's *limb*, as in all cases of altitudes or lunar distances. The latter, for computing the horizontal parallax of the Moon at any given latitude on the Earth, *considered as a spheroid;* also for finding the parallax in altitude, Right Ascension, &c., for the purpose of reducing an observation of the Moon made on the surface of the Earth, to what it would be if made at the centre.

In reducing observations of the Moon made at sea, the horizontal *equatorial* parallax is generally used for finding the parallax in altitude, without regarding the previous reduction to the spheroid; but in calculations requiring considerable precision, as in lunar occultations and solar eclipses, this reduction cannot be dispensed with.

Example. To find the Moon's semidiameter and horizontal parallax at 6^h A.M. February 16, 1861, at a place 15°, or 1^h to the East of Greenwich. The civil time at the place expressed in mean astronomical time, is February $15^d\ 18^h$, from which subtracting 1^h, because the place is to the East of Greenwich, we have February $15^d\ 17^h$ for the corresponding time at Greenwich, or 5^h after midnight. Proceeding from the semidiameter given for midnight of the 15th, we must compute the proportional part of the variation in 12 hours due to the time elapsed since midnight, viz. 5^h; and for ordinary purposes at sea, it will suffice simply to take this propor-

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tional part for the correction of the registered value preceding the given time; thus the semidiameter for midnight, or 12^h, of the 15th, is $14' 48''\cdot8$, and for the 16th at noon, or 24^h, it is $14' 51''\cdot1$; the difference $2''\cdot3$ is the variation in 12 hours. Therefore,

$$12^h : 2''\cdot3 :: 5^h : 1''\cdot0,$$

which *added* (because the quantities are increasing) to $14' 48''\cdot8$, gives $14' 49''\cdot8$ for the Moon's semidiameter at the time proposed. Similarly the horizontal parallax at midnight of the 15th is $54' 14''\cdot4$; and at noon of the 16th it is $54' 22''\cdot7$; the difference $8''\cdot3$ is the variation in the 12 hours which include the given time; therefore, $12^h : 8''\cdot3 :: 5^h : 3''\cdot5$, which *added* (because the quantities are increasing) to $54' 14''\cdot4$ gives $54' 17''\cdot9$ for the Horizontal parallax required. If greater accuracy be desired, a further correction must be applied to the values just obtained, on account of second differences, to compensate the error produced by supposing the first differences uniform. But the *greatest* error in the semidiameter which can arise by this supposition in the present instance is not one-tenth of a second; for, select four semidiameters from the Ephemeris, two preceding, and two following the given time, and take the first and second differences thus:—

	h	′	″	″	″
February 15,	0	14	47·2	+ 1·6	
	12	14	48·8	+ 2·3	+ 0·7
16,	0	14	51·1	+ 3·0	+ 0·7
	12	14	54·1		

The mean of the second differences is $0''\cdot70$ and $\frac{1}{8}$ of this, which is the *greatest* effect, is only $0''\cdot09$.

A similar operation performed on the parallaxes will show the error that would arise on the supposition of uniform or equal first differences, to be three-tenths of a second.

Page IV. of each Month.

The *Moon's Longitude and Latitude* at mean noon and midnight indicate the position of the Moon at these respective times, referred to the Ecliptic and the true equinox, as it would be seen from the centre of the Earth. They are the results deduced immediately from the lunar tables, and are the foundation of all subsequent calculations in which the Moon is concerned. These quantities are now of little use to the seaman, as the position of the Moon, with respect to the Equator, is given for every hour in the succeeding pages; but the Moon's Longitude is involved in the formulæ for nutation, and is therefore necessary for its determination. In finding the Moon's Longitude and Latitude for any other times than those of mean noon and midnight, it is necessary to apply the equation of second, and sometimes even of third and fourth differences, on account of the irregular variation of her motion.

The *Moon's Age* at mean noon is the mean time elapsed since the Moon's ecliptic conjunction with the Sun, or since the Sun and Moon had the same Longitude. The numbers in this column represent her age at Greenwich, and are expressed in days, and decimal parts of a day.

The *Moon's Meridian Passage.*—This column contains the Greenwich mean time to the nearest tenth of a minute, at which the Moon's centre is on the *upper* meridian of Greenwich, and is useful to indicate when the Latitude may be obtained from an observed meridian altitude of the Moon; also, in conjunction with a Table of semi-

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diurnal Arcs, to determine approximately the times of the rising and setting of the Moon: it is likewise useful in finding the time of High Water.

When the symbol (☌) denoting conjunction occurs, as on February 9, we are to understand that the Moon does *not* pass the *upper* meridian on that day at Greenwich. This is the case once in every lunation, and arises from the circumstance of the lunar day being greater than the mean solar day, and including it within its limits. In the present instance, the excess is $0^h\ 43^m \cdot 7$, or the lunar day is equal to $24^h\ 43^m \cdot 7$ mean solar time; the Moon passes the meridian on the 8th at $23^h\ 56^m \cdot 6$, or $3^m \cdot 4$ *previously* to the noon of the 9th, and does not return to the same meridian until $0^h\ 40^m \cdot 3$ *after* the noon of the 10th. For the same reason there is also one day in every lunation on which the Moon does not transit the *lower* meridian, and this happens about the time of opposition, or when the difference of longitude of the Sun and Moon is 180°. In the list of Moon-culminating stars, at pages 388 to 426, the days on which only one transit occurs are readily seen. On February 9th (page 392), for instance, it appears that the Moon transits the *lower* meridian only, while on February 24th (page 393), the only transit is that at the *upper* meridian.

To find the Mean Time of Transit under any other meridian, suppose 45° or 3^h West of Greenwich, on January 15, 1861. The meridian being to the West of Greenwich, the transit will take place *after* the Greenwich time of transit on the 15th; therefore take the difference between the meridian passages on the 15th and 16th, which is $0^h\ 40^m \cdot 2$. Then $24^h : 0^h\ 40^m \cdot 2 :: 3^h : 5^m \cdot 0$, which *added* to the Greenwich mean time of transit gives $3^h\ 30^m \cdot 9$ for the mean time of transit at the given meridian. Had the assumed meridian been 3^h to the East of Greenwich, the transit would have taken place *before* the transit at Greenwich, and the proportional part of the difference between the 14th and 15th, must in this case have been *subtracted*. The times thus deduced are only approximate; but they are sufficiently accurate for the purposes usually required.

Pages V. to XII. of each Month.

The *Moon's Right Ascension and Declination* for every hour of the day, with the *Difference of Declination for* 10 *minutes*. By means of the quantities here given, the Latitude, Time, Azimuth, Moon's rising and setting, &c., may be deduced, with nearly as little labour as is required in the case of the Sun. The numbers represent the position of the Moon, as it would appear from the centre of the Earth, with respect to the equator and the true equinox; and they are given for every hour, with the view of rendering any correction for second differences unnecessary, except where extreme precision is required. The Right Ascension for any time is readily obtained by simply adding the proportional part of the hourly variation due to the interval elapsed since the preceding hour. Thus, suppose the Right Ascension of the Moon were required at $8^h\ 45^m$ mean time on January 12, in longitude 60°, or 4^h east of Greenwich. The given time, $8^h\ 45^m$, diminished by 4^h, gives the corresponding Greenwich time $4^h\ 45^m$. The Right Ascension at 4^h is $20^h\ 50^m\ 10^s \cdot 13$, and at 5^h it is $20^h\ 52^m\ 13^s \cdot 63$; the difference $2^m\ 3^s \cdot 50$, is the increase in the interval, or 60^m. Hence, $60^m : 2^m\ 3^s \cdot 50 :: 45^m : 1^m\ 32^s \cdot 62$, which being *added* to the Right Ascension at 4^h, gives $20^h\ 51^m\ 42^s \cdot 75$ for the Right Ascension at $4^h\ 45^m$ at Greenwich, or at $8^h\ 45^m$ under the proposed meridian. To find the Declination, we make use of the numbers in the column headed "Diff. Dec. for 10^m." The number in this column standing opposite to any hour is $\frac{1}{4}$ of the difference of the Declinations at that and the following hour. We therefore say, $10^m : 112'' \cdot 30 :: 45^m : 8'\ 25'' \cdot 4$, which being

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subtracted (because the Declinations are decreasing) from S. 16° 3′ 2″·6, the Declination at 4ʰ, gives S. 15° 54′ 37″·2, for the Declination at the time proposed.

The *Phases of the Moon.* These are given at page XII. to the nearest tenth of a minute. The numbers denote the Greenwich mean time, at which the difference of Longitude between the Sun and the Moon is 0°, 90°, 180°, or 270°, being

0° at the New Moon,
90° at the First Quarter,
180° at the Full Moon,
270° at the Last Quarter.

The Moon's *Apogee and Perigee.* The numbers here given indicate, to the nearest hour, the Greenwich mean time at which the Moon is respectively at her greatest and least distance from the Earth.

Pages XIII. to XVIII. of each Month.

Lunar Distances.—These pages contain, for every third hour of Greenwich mean time, the angular distances between the apparent *centres* of the Moon and certain heavenly bodies, such as they would appear to an observer at the centre of the Earth. When a Lunar Distance has been observed on the surface of the Earth, and reduced to the centre, by clearing it of the effects of parallax and refraction, the numbers in these pages enable us to ascertain the exact Greenwich mean time at which the objects would have the same distance. They are arranged, from *west* to *east*, commencing each day with the object which is at the greatest distance *westward* of the Moon, in the precise order in which they appear in the heavens; W. indicating that the object is west, and E. east of the Moon. Thus we have at one view, by a simple reference to the date, all the lunar distances which are available for the determination of the Longitude.

The columns headed "P.L. of diff." contain the proportional logarithms of the differences of the distances at intervals of three hours, which are used in finding the Greenwich time corresponding to a given distance, according to the following rule, viz: For the given day, seek in the Ephemeris for the *nearest* distance *preceding*, in order of time, the given distance, and take the difference between it and the given distance; from the proportional logarithm of this difference subtract the proportional logarithm standing opposite to the said *nearest* distance in the Ephemeris; the remainder will be the proportional logarithm of a portion of time to be added to the hour answering to the *nearest* distance, to obtain the approximate Greenwich mean time corresponding to the given distance.

If the distance between the Moon and a Star increased or decreased uniformly, the Greenwich times corresponding to a given distance, as found by the above rule, would be strictly correct; but an inspection of the columns of the proportional logarithms in the Ephemeris will show that this is not the case; and as the knowledge of the exact Greenwich time is desirable, a correction must be applied to the time so found for the variation of the differences of the distances. This correction may be obtained by means of the Table at page 494 of the present volume, in the following manner:

1. Find the approximate interval by the preceding rule.
2. Take the difference between the proportional logarithms standing opposite to the distances in the Ephemeris which include the given distance.
3. With the approximate interval and this difference, as arguments, take out the correction from the table.

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4. If the proportional logarithms are *decreasing*, *add* the correction to the approximate time; but if *increasing*, *subtract* it: the result will be the accurate Greenwich mean time.

Example I.—Suppose it were required to find the Greenwich mean time, at which the *reduced* distance between the Moon and α Pegasi would be 32° 46′ 18″ on January 18, 1861. It appears, by inspecting the distances, that the time must be between *Noon* and III^h: the *nearest* distance *preceding*, in order of time, the given distance is therefore the

	°	′	″		
Distance at *Noon* -	32	8	17	and P.L. - -	3622
Reduced Distance -	32	46	18		
Difference - -	0	38	1	- - P.L. - -	6753
Approximate Interval	1^h 27^m 32^s			- P.L. - -	3131

The difference between the proportional logarithms in the Ephemeris, at *Noon*, and III^h, is 44. Opposite to 1^h 27^m 32^s (or the quantity nearest to it, 1^h 30^m), and under 44, in the table, we have for the correction 14^s, which, *added* to the approximate interval, 1^h 27^m 32^s, because the proportional logarithms are *decreasing*, gives 1^h 27^m 46^s, for the true interval from *Noon:* and hence the Greenwich mean time is 1^h 27^m 46^s.

We see that, in the preceding Example, the omission of this correction would only produce an error of 3′·50 in the Longitude. Cases may, however, occur, in which it would be greater.

It will sometimes happen, that the difference of the proportional logarithms will exceed 138, the limit of the table of correction; in this case the table may be entered with the approximate interval, and *one-half or any fraction* of the difference of the proportional logarithms and the corresponding correction *increased in like proportion.*

Example II.—Suppose it were required to find the Greenwich mean time, at which the *reduced* distance between the Moon and Fomalhaut would be 34° 46′ 57″ on April 30, 1861. By inspecting the distances, it appears that the time must be between XVIII^h and XXI^h; therefore take the

	°	′	″		
Distance at XVIII^h -	35	21	16	and P.L. - -	4401
Reduced Distance -	34	46	57		
Difference - - -	0	34	19	- - P.L. - -	7198
Approximate Interval	1^h 34^m 32^s			- P.L. - -	2797

The difference between the proportional logarithms in the Ephemeris, at XVIII^h and XXI^h, is 163, one-half of which is 81; under this number in the table, and opposite that nearest the approximate interval, is 25^s: the correction is therefore 50^s to be *subtracted* from the approximate interval, because the proportional logarithms are *increasing;* the time at Greenwich is therefore 19^h 33^m 42^s.

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The omission of the correction in the preceding example would produce an error of 12''·5 in Longitude; it may, however, be considered as an extreme case, and such as will seldom be met with.

The proportional logarithms also serve to point out the star which is most favourably circumstanced for accurate observation; that star being to be preferred which has the least proportional logarithm opposite to it; for, the greater the velocity of the Moon from or towards a Star, the greater is the reliance to be placed on an observation of the distance; and it is a property of proportional logarithms to decrease as their natural numbers increase: a smaller proportional logarithm, therefore, indicates a greater velocity of the Moon, or a greater variation of distance in the interval, upon which the value of the observation depends. Thus, on May 20, 1861, between *Noon* and III^h, Antares is the most eligible star, because the proportional logarithm, 2145, is less than that of any other; and, by inspecting the columns of proportional logarithms, it will appear to deserve the preference until May 22, at Midnight.

On the 22nd day of November, between IX^h and *Midnight*, the following is the order of preference, as indicated by the proportional logarithms, viz., Spica, α Arietis, Aldebaran, Regulus, Saturn, Jupiter, Mars, Sun.

It is by no means to be inferred from these remarks that observations of any of the distances are to be neglected; on the contrary, every registered star should invariably be observed when an opportunity offers. If, however, on a comparison of results, a considerable difference should be discovered, the proportional logarithms will indicate the stars which are least liable to be affected by errors of observation, and therefore deserving of a greater degree of confidence as to the accuracy of the results obtained from them.

Page XIX. of each Month.

Airy's Day Numbers, for correcting the Places of the Fixed Stars.

These are computed from the logarithms of A, B, C, D, in page XX, by the formulæ in the introduction to the Greenwich Twelve-year Catalogue,* and are used with constants found in that Catalogue. They have been employed for some time at the Royal Observatory, Greenwich, and their use is considered by the Astronomer Royal, to possess some advantage over the well known method of Bessel, in consequence of there being no algebraic signs to attend to; the following example will illustrate their application, and serve for comparison with the similar operation by Bessel's method in page 522.

Required the corrections of the Right Ascension and North Polar Distance of γ Orionis (No. 454 G^h 12 Yr. Cat.) for Precession, Aberration, and Nutation, at Greenwich mean midnight on February 5, 1861.

	Logarithms.	Nat. Nos.		Logarithms.	Nat. Nos.
e - -	0·08367		e' - -	9·94196	
E - -	1·05027		E - -	1·05027	
		s			"
	1·13394 - - - - - -	13·613		0·99223 - - - - - -	9·82

* Catalogue of 2156 Stars, formed from the observations made during twelve years from 1836 to 1847, at the Royal Observatory, Greenwich. London, 1849, 4to.

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	Logarithms.		Nat. Nos.
f - -	0·10240	*Brought up*	13·613
F - -	1·58970		
	1·69210	- - - - - -	49·216
g - -	1·45046		
G - -	0·21515		
	1·66561	- - - - - -	46·303
h - -	0·07967		
H - -	1·33262	- -	
	1·41229	- - - - - -	25·840
		Value of l	84·150
		Value of L	83·035
		Sum - -	302·157
		Constant —	300·0
Correction of Right Ascension +			2·157

	Logarithms.		Nat. Nos.
f' - -	0·07185	*Brought up*	9·82
F - -	1·58970		
	1·66155	- - - - - -	45·87
g' - -	1·32770		
G - -	0·21515		
	1·54285	- - - - - -	34·90
h' - -	0·33894		
H - -	1·33262		
	1·67156	- - - - - -	46·94
		Value of l'	78·55
		Value of L	83·04
		Sum - -	299·12
		Constant —	300·0
Correction of North Polar Distance —			0·88

Page XX. of each Month.

1. *Logarithms of* A, B, C, D, *for correcting the Places of the Fixed Stars.*

In the formulæ which express the relation of the apparent place of a Star to its mean place, and reciprocally, there are certain factors which are independent altogether of the Star's place, and are therefore common to all Stars. These factors depend upon the longitudes of the Sun, Moon, and Moon's ascending Node.

The logarithms here given are the logarithms of these independent factors conveniently arranged for incorporation with other terms depending upon each particular Star, according to the method recommended by the late Professor Bessel. They have been computed for mean midnight at Greenwich, according to the formulæ exhibited at page 327, omitting in C and D the terms depending on $2\mathfrak{C}$.

In the form under which they now appear, they are chiefly used in conjunction with the Catalogue of the British Association,* which contains the logarithms of the remaining factors depending on the Star's place; and for the reduction of any Star in that Catalogue, they appear to afford every facility that can be desired.

Where, however, the apparent place of any Star, *not in the British Association Catalogue*, is required, similar quantities to those must either be computed with reference to the particular Star, before we can use the A, B, C, D, or recourse must be had to other and independent means; such, for instance, as are afforded by the table at pages 328 and 329, which serves equally for all Stars. The formulæ by which this table has been constructed are given at page 327.

The following Examples will sufficiently illustrate the mode of using both tables.

* "The Catalogue of Stars of the British Association for the Advancement of Science; containing the Mean Right Ascensions and North Polar Distances of eight thousand three hundred and seventy-seven Fixed Stars, reduced to January 1, 1850: together with their annual precessions, secular variations, and proper motions, as well as the logarithmic constants for computing precession, aberration, and nutation. With a Preface explanatory of their Construction and Application. By the late Francis Baily, Esq." London, 1845. 4to.

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Required the Correction ($\Delta\ \alpha$) of the Right Ascension and ($\Delta\ \delta$) of the Declination of γ Orionis (No. 1687 B.A.C.) for Precession, Aberration, and Nutation, at Greenwich mean midnight, on February 5, 1861.

1.—By the B.A.C. Constants and the Logarithms of A, B, C, D.

	h m s		° ′ ″
Mean α, Jan. 1, 1850	5 17 5·33	Mean δ	+ 6 12 34·3
11 Years' precession and proper motion	+ 35·42	11 Years' precession and proper motion	+ 40·9
Mean α, Jan. 1, 1861	5 17 40·75	Mean δ	+ 6 13 15·2

	Logarithms.	Nat. Nos.		Logarithms.	Nat. Nos.
a	+ 8·0963		a'	+ 9·5120	
A	− 1·1390		A	− 1·1390	
a A	− 9·2353	− 0·172	a' A	− 0·6510	− 4″·477
b	+ 8·8188		b'	+ 8·3039	
B	+ 1·1423		B	+ 1·1423	
b B	+ 9·9611	+ 0·914	b' B	+ 9·4462	+ 0·279
c	+ 0·5070		c'	+ 0·5721	
C	+ 9·6446		C	+ 9·6446	
c C	+ 0·1516	+ 1·418	c' C	+ 0·2167	+ 1·647
d	+ 7·1304		d'	− 9·9923	
D	− 0·5430		D	− 0·5430	
d D	− 7·6734	− 0·005	d' D	+ 0·5353	+ 3·430
	$\Delta\ \alpha =$	+ 2·155		$\Delta\ \delta =$	+ 0·879

2.—By the independent Constants.

For February 5, 1861, the Table at pages 328, 329, furnishes

$f = +20''\cdot33$; $g = +9''\cdot51$; $G = 338°\ 28'$; $h = +19''\cdot55$; $H = 315°\ 13'$; $i = -5''\cdot98$

α (*in time*) converted = 79 25 - - - - - - - 79 25

$G + \alpha =$ 57 53 $H + \alpha =$ 34 38

	Logarithms.	Nat. Nos.		Logarithms.	Nat. Nos.
f		+ 20″·33			
g	+ 0·9782			+ 0·9782	
sin ($G + \alpha$)	+ 9·9279		cos	+ 9·7256	
tan δ	+ 9·0374				
				+ 0·7038	+ 5″·06
	+ 9·9435	+ 0·88			
h	+ 1·2912			+ 1·2912	
sin ($H + \alpha$)	+ 9·7546		cos	+ 9·9153	
sec δ	+ 0·0026		sin	+ 9·0349	
	+ 1·0484	+ 11·18		+ 0·2414	+ 1·74
	$\Delta\ \alpha$ (*in arc*) =	+ 32·39	i	− 0·7767	
	$\Delta\ \alpha$ (*in time*) =	+ 2s·159	cos δ	+ 9·9974	
				− 0·7741	− 5·94
				$\Delta\ \delta =$	+ 0·86

Hence the App. Right Ascens. of γ Orionis = 5 h 17 m 40·75 s + 2·16 s = 5 h 17 m 42·91 s

and the Apparent Declination - - - - = + 6° 13′ 15″·2 + 0″·9 = + 6° 13′ 16″·1

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2. *Mean Time of Transit of the First Point of Aries.*

The time in this column shows the distance of the *mean* Sun from the meridian, at the instant when the *true* point of intersection of the ecliptic and equator (called the first point of Aries) is on the meridian of Greenwich; and as the distance of the first point of Aries from the meridian, at the instant the mean Sun is on the meridian, is denominated sidereal time at mean noon, this may, by analogy, be termed the *mean time* at *sidereal noon*. It is the time which ought to be shown by a mean time clock adjusted to the Greenwich meridian, at the moment that a clock, adjusted to sidereal time, indicates exactly $0^h\ 0^m\ 0^s$. The use of this column is to facilitate the reduction of sidereal to mean solar time, with the help of the Table of Time Equivalents, given at pages 500 and 501, as has been already explained at page 514.

3. *Mean Equinoctial Time.*

Mean Equinoctial Time signifies the mean time elapsed since the instant of the mean vernal equinox. The numbers in this column represent this time, at every mean noon, in mean solar days and fractional parts of a day; it is reckoned from the mean vernal equinox of 1860, between January 1^d and March $22^d \cdot 034807$, but after March $22^d \cdot 034807$ from the vernal equinox of 1861; for the Equinoctial Year has been assumed equal to $365 \cdot 242216$ mean solar days; and as the Equinoctial Time corresponding to the mean noon of March 22, 1861, is $365^d \cdot 207409$, it is evident that the Equinoctial Year of 1860-61 will be completed, and a new year commenced, at $0^d \cdot 034807$ after Mean Noon of the 22nd.

The Fraction of the day at the head of the column is common to all the days of the Equinoctial Year. Thus at mean noon of January 19, 1861, the Equinoctial Time is $303^d \cdot 207409$, and on January 20 it is $304^d \cdot 207409$, and so on until March $22^d \cdot 034807$, when the year terminates, and the fractional part of the day changes. At Mean Noon of March 23, 1861, the Equinoctial Time is $0^d \cdot 965193$, and this fraction is to be annexed to all the numbers in the column of days, from the period of the change until the equinox of 1862.

At the instant the mean Sun arrives at the mean vernal equinox, it must also be on *some* meridian, and this meridian will then have its equinoctial time corresponding with its mean solar time, each of which will be $0^h\ 0^m\ 0^s$, and they will continue to correspond throughout the Equinoctial Year. At the end of the Equinoctial Year, the Sun will have passed this meridian 365 times, and have performed, besides, a certain portion of its 366th diurnal revolution, viz. $0^d \cdot 242216$; it will, therefore, have arrived at some other meridian, which will now, in its turn, reckon the mean equinoctial and mean solar time from the same point, and remain constant for the year. Thus the meridian, from which the time is reckoned, is shifting its position at the end of every year by $0^d \cdot 242216$, or $5^h\ 48^m\ 47^s \cdot 46$, to the Westward. Between the vernal equinoxes of 1861 and 1862, this itinerant meridian corresponds to Longitude $0^d \cdot 965193$ East, or $0^h\ 50^m\ 7^s \cdot 32$, West of Greenwich.

This species of time was first introduced in the Supplement to the NAUTICAL ALMANAC for 1828, with a very full explanation of its nature and use. It there appears, that the use of Equinoctial Time is to afford an uniform date, which shall be independent of the different meridians, and of all inequalities in the Sun's motion, and shall thus save the necessity, when speaking of the time of any event's happening, of mentioning at the same time the place where it was observed or computed. Thus, it is the same thing to say that a comet passed its perihelion on January 5, 1861, at $5^h\ 47^m\ 0^s \cdot 0$

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mean time at Greenwich; at $5^h\ 56^m\ 20^s{\cdot}6$, mean time at Paris; or at 1860y $289^d\ 10^h\ 45^m\ 40^s{\cdot}14$ equinoctial time; but the former dates make the localities of Greenwich and Paris enter as elements of the expression; whereas the latter expresses the period elapsed since an epoch common to all the world, and identifiable independently of all localities. By this means all ambiguities in the reckoning of time are supposed to be avoided.

To convert mean solar into equinoctial time: To the corresponding Greenwich mean time add the equinoctial time at mean noon of the same day at Greenwich: the sum will be the equinoctial time required. Thus, in the instance of the comet before alluded to, Paris being $9^m\ 20^s{\cdot}6$ East of Greenwich, subtract this from the Paris time and we get $5^h\ 47^m\ 0^s{\cdot}0$ for the corresponding Greenwich time, to which add $289^d{\cdot}207409$, or $289^d\ 4^h\ 58^m\ 40^s{\cdot}14$, the Mean Equinoctial Time at Greenwich mean noon of January 5, and the sum will represent the mean equinoctial time of the comet's passage of its perihelion, viz., $289^d\ 10^h\ 45^m\ 40^s{\cdot}14$, from the vernal equinox of the year 1860.

It may here be stated, that in the Supplement to the Nautical Almanac for 1828, the equinoctial time is based on the mean Longitude in Delambre's Solar Tables, and an assumed *invariable* length of the Equinoctial year = 365·242264 mean solar days, with a recommendation that any subsequent improvements in the solar theory be disregarded. An alteration was, however, made in the Nautical Almanac for 1834, and continued to 1856, by substituting Bessel's mean Longitude and his *variable* length of the Equinoctial year. Sir John Herschel has suggested as an approximation to consistency, the correction of the equinoctial times 1827–28 to 1833–34, for the difference between Bessel and Delambre, and the permanent adoption, after 1856, of 365·242216 mean solar days for the length of the Equinoctial year. Between 1834 and 1856, the error arising from the assumed variable length is too minute to require notice, being at most ·000002, and generally less.

The corrections of 1827–28 to 1833–34 are as under:—

	d
1827–28	+0·001802
1828–29	·001848
1829–30	·001894
1830–31	·001940
1831–32	·001986
1832–33	·002032
1833–34	+0·002078

4. *Day of the Year.*

The numbers in this column indicate the complete days at mean noon which have elapsed since mean noon of January 1. Mean noon of January 1 is therefore reckoned 0, and 1 is found opposite to that of January 2, because at that instant one entire day has elapsed.

5. *Fraction of the Year.*

These fractions are the quotients found by dividing the numbers in the preceding column by 365·242. The day and fraction of the year are useful in many Astronomical calculations.

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Obliquity of the Ecliptic. (Page 242.)

The apparent inclination of the plane of the Ecliptic to that of the Equator is here given for every 10th day of the year, and continued to January 5 of the following year, marked December 37 for the sake of convenience. This inclination is ever varying, as well from the effect of its mean diminution, as of the nutation of the earth's axis: it is an important element in deducing the positions of the heavenly bodies, with reference to either of the planes, when we know their positions with respect to the other; as, for instance, in computing Right Ascensions and Declinations from Longitudes and Latitudes, and *vice versâ*. If the apparent Obliquity be required for any date not to be found in the Table, it may be obtained by simply taking the proportional part of the variation of the obliquity corresponding to the interval which comprises the given date. Thus, the apparent Obliquity on November 1, 1861, is 23° 27′ 27″·92. For the variation of the Obliquity in the ten days between October the 28th and November the 7th, is 0″·28, or 0″·028 for one day, and this being multiplied by 4, the number of days between October 28th and November 1st, gives 0″·11, to be *subtracted* from the Obliquity of October the 28th. For most purposes, however, the Obliquity corresponding to the date in the Table nearest to the given date is sufficient, as is evident from an inspection of the quantities.

Sun's Horizontal Parallax. (Page 242.)

The Sun's Horizontal Parallax is the *greatest* angle under which the equatorial semidiameter of the earth would appear at the Sun's centre. It varies inversely as the distance, and the numbers in this column show the values for every tenth day of the year.

The Parallax serves for reducing a solar observation made at the surface of the earth to what it would have been if made at the centre.

Sun's Aberration. (Page 242.)

The progressive motion of light, combined with the motion of the Earth in its orbit, causes the Sun to appear in a different position from that which he really occupies, the true position being always in advance of the apparent. The numbers in this column indicate, for every 10th day of the year, the amount of aberration, or the quantity to be applied to the *true* Longitude of the Sun to obtain the *apparent* Longitude. The Longitudes derived from the solar tables include aberration, and are therefore *apparent* Longitudes, such as are contained in this Ephemeris. If the *true* Longitude of the Sun be wanted, as is the case in finding the longitude of the Earth for the calculation of the Geocentric place of a body, the aberration must be applied with a contrary sign. Thus, on April 11, 1861, at mean noon, by *adding* 20″·39, the amount of aberration, to 21° 34′ 25″·5, the apparent Longitude of the Sun, we obtain 21° 34′ 45″·89 for the true Longitude.

Precession in Longitude. (Page 242.)

This column contains the amount of the retrograde motion on the Ecliptic of the point of intersection of the Equator and Ecliptic, or first point of Aries, for each 10th day from January 1, 1861, and is useful for reducing a longitude reckoned from the *Mean* Equinox of any given date to that of January 1, or any other date.

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Thus, suppose it were required to refer the true Longitude of the Sun on April 11, 1861, to the mean Equinox of January 1, 1861.

The *apparent* Longitude, from the true equinox of April 11, is 21° 34′ 25″·5; the aberration −20″·39 and the Equation of the Equinoxes +15″·41 being applied with the signs changed, give 21° 34′ 30″·48 for the *true* longitude from the mean equinox of April 11; and *subtracting* 13″·76, the amount of precession, there results 21° 34′ 16″·72 for the true Longitude of the Sun on April 11, but reckoned from the mean equinox of January 1, 1861.

Equation of the Equinoxes. (Page 242.)

The Solar and Planetary Tables furnish us with the places of the heavenly bodies referred to the mean equinox; but the true place of the equinox at any time differs from its mean place, by a quantity which is termed the Equation of the Equinoxes; and the numbers here given show the value of the equation for every 10th day of the year. They are to be applied, with their proper signs, to the Longitudes reckoned from the mean equinox, to obtain the values with respect to the true equinox.

If the Longitude of a body be given with reference to the true equinox, as in this Ephemeris, and it be required to find its Longitude reckoned from the mean equinox, the equation of the equinoxes must be applied with a contrary sign. Thus, the Longitude of the Sun, reckoned from the true equinox, on April 11, 1861, at mean noon, is 21° 34′ 25″·5, and the Equation of the Equinoxes is + 15″·41; therefore, applying it with the contrary sign, the difference 21° 34′ 10″·09, is the Sun's Longitude from the *mean* equinox on that day.

The Equation corresponding to any date not contained in the table, may be obtained in the usual way by interpolation.

The Equation of the Equinoxes in Right Ascension, in a similar manner, enables us to find the *apparent* point of intersection of the Ecliptic *on the Equator;* and is necessary in computing sidereal time, &c.

Mean Longitude of ☊'s ascending Node. (Page 242.)

This column contains the Mean Longitude of the Moon's ascending Node, at mean noon of every 10th day of the year, reckoned from the mean equinox. The place for any intermediate day is easily found from the daily motion inserted at the foot of the column. The Longitude of the Node is necessary in many calculations; it is sometimes used to determine roughly the Stars which are likely to undergo occultation by the Moon.

Sun's Co-ordinates. (Pages 243 to 250.)

These pages contain for each Greenwich mean noon the Sun's true Geocentric Co-ordinates X, Y, Z; X being measured on a line passing through the true vernal Equinoctial point of the date; Y, on a line in the plane of the Equator, in the direction of the first point of Cancer; and Z, perpendicular to the plane of the Equator, towards the North. To facilitate cometary calculations reductions are given for converting the co-ordinates X, Y, Z, referred to the true equinox of the date, into co-ordinates referred to the mean equinox of January 1, 1861.

Planetary Ephemerides at Mean Noon. (Pages 251 to 300.)

These pages contain the Geocentric and Heliocentric places of the Planets, Mercury, Venus, Mars, Jupiter, Saturn, Uranus, and Neptune.

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The Geocentric places are the places of the centres of the planets, as they would appear from the centre of the Earth; the Heliocentric, such as they would appear from the centre of the Sun.

The positions of Mercury, Venus, Mars, Jupiter, and Saturn are given for Greenwich Mean Noon on every day of the year, those of Uranus and Neptune for each fourth day. The Geocentric Right Ascensions and Heliocentric Longitudes, are reckoned from the true equinox. The Geocentric Right Ascensions and Declinations *are affected with aberration*, and are therefore *apparent* positions.

By means of the positions of Venus, Mars, Jupiter, and Saturn, and particularly of Venus and Jupiter, which are frequently visible when the Sun is above the horizon, the Latitude, Time, and Variation of the Compass, may be found with nearly as much facility and accuracy as by the Sun.

The column headed "Meridian Passage" shows the mean time of the Planet's transit over the meridian of Greenwich, and serves to find the mean time of transit over any other meridian. As in the instance of the Moon before noticed, there are some days on which the planets do not pass the meridian; these are indicated by two asterisks (* *). If we refer to page 252, we shall find that Mercury does not pass over the Greenwich meridian on January 25th, and for a similar reason, viz., that the planetary day is here longer than the mean solar day, and commences so near, but previously, to the noon of the 25th, viz., $2^m \cdot 3$, as to want still $0^m \cdot 8$ of its completion at the termination of the 25th day. The planetary day therefore, includes the solar day of January 25th: it begins *before* the solar day and ends *after* it, and the planet cannot arrive at the meridian at any period of it.

Another phenomenon takes place in the case of the planets, which, however, does not occur with the Moon; it is that of two transits on the same day, which arises from the planetary day being sometimes *shorter* than the solar day, commencing *after* and terminating *before* the solar day, and thus falling entirely within it. This cannot be the case with the Moon, because the lunar day is always greater than the solar day. When two transits occur, the times of both are registered, as at page 257, July 22nd, where it appears that Mercury passes the Greenwich meridian $4^m \cdot 2$ after mean noon of the 22nd, and again at $23^h\ 57^m \cdot 5$ on the same day, or $2^m \cdot 5$ before the arrival of the following Mean Noon.

The positions of the planets for any time not given in the Ephemeris, and under any other meridian than that of Greenwich, are to be found by interpolation in the usual way. *Example:* Required the Right Ascension and Declination of Venus at 6^h Mean Time on June 15, 1861, in longitude 30° west of Greenwich; also the time of Venus' passage over this meridian on the same day. The difference of longitude 2^h *added* (because it is west) to the given time, gives 8^h for the corresponding Greenwich time.

1. *For the Right Ascension.* The Right Ascension on June 15 is $6^h\ 16^m\ 14^s \cdot 55$, and on June 16 it is $6^h\ 21^m\ 37^s \cdot 47$; the difference $5^m\ 22^s \cdot 92$, is the variation of the Right Ascension in 24 mean hours; therefore $24^h : 5^m\ 22^s \cdot 92 :: 8^h : 1^m\ 47^s \cdot 64$ the proportional part of the variation answering to 8^h; and this proportional part *added* (because the Right Ascensions are increasing) to $6^h\ 16^m\ 14^s \cdot 55$, the Right Ascension at mean noon on June 15, gives $6^h\ 18^m\ 2^s \cdot 19$ for the Right Ascension required.

2. *For the Declination.* The Declination on June 15 is N. 24° 9′ 29″·7, and on the 16th it is N. 24° 9′ 10″·7, the difference, 0′ 19″·0, is the variation in 24

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hours; and the proportional part of this variation for 8^h is $0'\ 6''\cdot3$, which, *subtracted* from the Declination at noon on the 15th, gives N. 24° 9′ 23″·4 for the Declination required.

3. *For the Meridian Passage.* Take the difference of the times of two consecutive transits; and considering this difference as an acceleration or retardation of the Meridian Passage while the planet has passed over 24^h of geographical longitude, take the proportional part of it, due to the difference of meridians, for a correction to be applied to the Meridian Passage at Greenwich, bearing in mind that in east longitude the passage precedes that at Greenwich, when times are accelerated, and follows it, when they are retarded; and the contrary in west longitude. In the present case Venus passes the meridian of Greenwich on June 15 at $0^h\ 41^m\cdot3$, and on June 16 at $0^h\ 42^m\cdot7$, the difference is $1^m\cdot4$, therefore $24^h : 1^m\cdot4 :: 2^h : 0^m\cdot1$, the proportional part to be *added* to $0^h\ 41^m\cdot3$, (because the passages are accelerated, and the longitude is west of Greenwich,) which gives $0^h\ 41^m\cdot4$, mean time at the given place, for the Meridian Passage. Where great accuracy is not required, as in predicting the time of passage, in order to be prepared for observing the altitude of the planet on the meridian, for the determination of the latitude, this method will suffice.

Planetary Ephemerides at Transit. (Pages 301 to 322.)

These pages contain the Right Ascension and Declination at Transit over the Meridian at Greenwich, within the limits stated in the Preface, and are readily reduced to the time of transit over any other meridian not far distant from Greenwich, by means of their Variations in 1 hour of Longitude. Thus: prefix the sign — to the Longitude of the proposed meridian if it be east of Greenwich, but + if it be west, and multiply it by the variation; the product applied *algebraically* (South Declination being considered as negative) to the transit results for Greenwich, will give those for the proposed meridian. *Example:* Suppose the Right Ascension and Declination of Venus were required at Vienna on November 23rd, 1861. Vienna is east of Greenwich $1^h\ 5^m\ 31^s\cdot9$, or $-1^h\cdot092$, and the "Variation of Right Ascension in 1 hour of Longitude" on November 23rd is $+12^s\cdot26$: the product of these numbers is $-13^s\cdot39$, which, applied to $19^h\ 16^m\ 18^s\cdot99$, the Transit Right Ascension at Greenwich, gives $19^h\ 16^m\ 5^s\cdot60$ for that at Vienna. The Variation of the Declination on November 23rd is $+22''\cdot4$, and the product of $+22''\cdot4$ and $-1^h\cdot092$ is $-0'\ 24''\cdot5$, which applied to S. or $-25°\ 4'\ 45''\cdot8$, gives S. 25° 5′ 10″·3 for the Declination at Vienna. Had this example been for Nov. 24 instead of Nov. 23, the variations in 1 hour of Longitude would have been respectively $+12^s\cdot20$ and $+24''\cdot0$, being the mean of those for Nov. 23 and Nov. 25; and the products of these and $-1^h\cdot092$ must have been applied to $19^h\ 21^m\ 12^s\cdot36$ and S. 24° 55″ 28′·6, being the Right Ascension and Declination standing to the right hand and between those on Nov. 23 and Nov. 25.

The "Sid. Time of Sem. pass. Mer." (Sidereal Time of the Semidiameter passing the Meridian,) serves to reduce an observation of the Right Ascension of the limb, to that of the centre, and the "Semidiameter" answers a similar purpose for the Declination.

The "Hor. Par.," or Horizontal Parallax, serves for reducing an observation made at the surface to the centre of the Earth.

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Fixed Stars. (Pages 323 to 387.)

In pages 323 to 326 are given the Mean Right Ascensions and Declinations of 147 fixed Stars for Jan. 0^d—·130, 1861, together with their Annual Variations.

North Declination is distinguished by N., and South Declination by S.

The sign + prefixed to an Annual Variation of Right Ascension indicates that the variation is to be *added to*, and the sign —, that it is to be *subtracted from*, the Right Ascension: also, for Stars having *North* Declination, + signifies *add*, and — *subtract:* but for Stars of *South* Declination, + denotes that the Variation is to be *subtracted from*, and — that it is to be *added to*, the Declination.

Example * 1. Required the Mean Right Ascension and Declination of α Tauri or *Aldebaran* on May 31, 1861. The Annual Variation of the Right Ascension is $+3^s\cdot4343$; the Fraction of the year corresponding to May 31, is ·4107 + ·0031 = ·4138 (page XX. of May); the product of these numbers ($1^s\cdot421$) is the proportional part of the annual variation due to the period elapsed since January 0^d—·130 which *added*, because the sign is +, to the Mean Right Ascension on Jan. 0^d—·130, *viz.*, $4^h\ 27^m\ 56^s\cdot869$, gives $4^h\ 27^m\ 58^s\cdot290$, for the Mean Right Ascension on May 31. The Annual Variation of the Declination is $+7''\cdot663$, which, multiplied by ·4138 as before, and the product ($3''\cdot17$) *added*, because the sign is + and the Declination *North*, to the Mean Declination on Jan. 0^d—·130 1861, *viz.*, N. 16° 13′ 35″·34, gives N. 16° 13′ 38″·51, for the Mean Declination required.

Example 2. Required the Mean Right Ascension and Declination of β Ursæ Minoris on June 1, 1861. Here the Annual Variation of Right Ascension is $-0^s\cdot2582$, and the fraction of the Year ·4134 + ·0031 = ·4165 (page XX. of June); the product ($0^s\cdot108$) therefore being *subtracted*, because the sign of the Annual Variation is—, from $14^h\ 51^m\ 9^s\cdot144$, the Right Ascension on Jan. 0^d —·130, gives $14^h\ 51^m\ 9^s\cdot036$, for the Right Ascension on June 1, 1861.

For the Declination, we have the Annual Variation = — 14″·754, which, multiplied by ·4165, gives 6″·15. The Declination being *North*, and the sign of the Variation —, this product must be *subtracted* from N. 74° 43′ 24″·04, and the result is N. 74° 43′ 17″·89.

Example 3. Required the Mean Declination of α Scorpii or *Antares* on May 31, 1861. The Annual Variation is — 8″·432, and the fraction of the Year ·4138; the product of these numbers (3″·49) being *added*, because the Declination is *South*, and the sign of the Variation —, to the Declination on Jan 0^d—·130, *viz.*, S. 26° 7′ 11″·92, the sum, S. 26° 7′ 15″·41, is the Declination on May 31, 1861.

Next (page 327) follow Bessel's Formulæ of Reduction; and (pages 328 and 329) a Table for the reduction of Stars, independently of the Constants, in the Catalogue of the British Association, an example of which is given at page 522.

The apparent places of α and δ Ursæ Minoris are given for every day of the year, and those of the remaining 145 Stars for every *tenth* day.

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* Similar examples to these have been given in the Nautical Almanacs 1834 to 1860, but the Seaman will find it more convenient to consult pages 330 to 385, from which the Star's Right Ascension and Declination can be obtained with more accuracy by inspection. Thus, in page 343, the Right Ascension of *Aldebaran* on May 31, is $4^h\ 27^m\ 57^s\cdot95$, and the Declination N. 16° 13′ 39″·8.

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The hours and minutes of Right Ascension, and the degrees and minutes of Declination, are placed at the heads of the columns as constants, and belong equally to all the numbers below them. This arrangement has rendered it necessary in numerous instances, to continue the seconds beyond 60, as the width of the page would not permit of otherwise indicating any change in the minutes. Thus, the apparent Right Ascension of β Arietis at page 339, on Nov. 7, 1861, is registered $1^h\ 46^m\ 63^s{\cdot}11$, and is to be read $1^h\ 47^m\ 3^s{\cdot}11$. On the same day the Declination of the same Star is registered N. 20° 7′ 66″·3, which signifies N. 20° 8′ 6″·3.

The small figures on the right hand of the vertical column of seconds represent the differences of the quantities above and below them on the left, or the variation of Right Ascension and Declination in 10 days, and serve to find, by interpolation, the values for an intermediate day. As in the case of the Planets before explained, a Star will sometimes arrive at the meridian twice in one apparent solar day. When this occurs on one of the given dates, the Star's place is registered for each transit, as at page 352, for ϵ Hydræ on July 30; but in other cases the day of the month on which two transits occur is placed opposite to the interval. In these particular instances the Star passes the meridian 11 times in the 10 apparent solar days, and consequently the Right Ascension or Declination at transit on any intermediate day is to be determined by taking $\frac{1}{11}$th part, instead of $\frac{1}{10}$th, of the variation in the interval. Thus, at page 346, we find in the instance of ϵ Orionis the figures 13 opposite the interval between June 10 and June 20, indicating that the double transit occurs on June 13, and a difference of $0^s{\cdot}13$ opposite to the interval between the seconds belonging to those dates, $\frac{1}{11}$ of which is ·012; for the first transit on June 13, we should therefore multiply ·012, by the days elapsed since June 10, but for the second and following transits by the days elapsed increased by 1.

When extreme accuracy is required, the apparent places of the 5 Polar Stars demand a further correction, depending on the terms which involve 2 ☾. The apparent places do not include these corrections, on account of the rapid variation of the argument, viz., about 26° in a day, but they are given in a Table at pages 386, 387, for every degree of the Moon's Longitude, and may be readily applied, agreeably to the precept at the foot of that Table.

Formulæ for correcting for *daily* aberration are given in the Preface.

Moon-Culminating Stars. (Pages 388 to 426.)

Those Stars are denominated Moon-Culminating Stars, which being near the Moon's parallel of Declination, and not differing much from her in Right Ascension, are proper to be observed with the Moon, in order to determine differences of meridians. This is effected by comparing the differences of the observed Right Ascensions of such a Star and the Moon's bright limb at any two meridians. If the Moon had no motion, the difference of her Right Ascension from that of the Star would be constant at all meridians; but in the interval of her transit over two different meridians, her Right Ascension will have varied, and the difference between the two compared differences will exhibit the amount of this variation, which added to the differences of the meridians, shows the angle through which the westerly meridian must revolve before it comes up with the Moon; hence, and knowing the rate of her increase in Right Ascension, the difference of Longitude may be easily obtained.

For the determination of this variation, recourse has hitherto been had to actual observations made at different meridians, because any errors in the computed places

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of the Moon and Stars are thereby avoided: and the places were formerly given merely with the view of indicating the times when the observations were to be made. In the present list, however, the Right Ascensions are given with every possible degree of accuracy, so that they may be considered, at least approximately, in the light of corresponding observations made at Greenwich, and be taken to represent the indications of the Greenwich instruments, the same as though they had been actually observed. The traveller has thus an opportunity of rendering his observations immediately available for determining his longitude with considerable accuracy.

The Right Ascension of the Moon's bright limb and *Declination of her centre*, at the instant of their respective transits at Greenwich, are given for the lower as well as the upper Culmination, L. being put to denote the Lower Culmination, and U. the Upper Culmination; the Roman numerals indicate the limb of the Moon with reference to its transit over the meridian. The Moon's age at the time of her upper transit, to the nearest tenth of a day, is inserted in the column containing the magnitudes of the Stars.

The numbers in the column "Var. of ☾'s R.A. in one hour of Long." represent the Variation in Right Ascension of the Moon's Limb during the interval of her transit over two meridians, equidistant from that of Greenwich, and *one* hour distant from each other. They have been deduced from the Right Ascensions of the *bright limb*, and therefore include the effect produced by the change of the semidiameter.

They serve to determine the Longitude where the difference of meridians is not very great; but where this difference is considerable, and extreme accuracy is wanted, that variation in Right Ascension should be used which corresponds to the middle of the interval between the observations, which may be readily obtained by interpolation. They also serve to determine the Right Ascension of the bright limb at its transit over any other meridian. Thus: Multiply the difference of longitude between Greenwich and the given meridian, by the variation; and, according as the given meridian is east or west of Greenwich, subtract or add the product to the Right Ascension at Greenwich; the result will be the Right Ascension of the bright limb at transit over the proposed meridian. *Example:* On June 25, 1861, the Right Ascension of the Moon's second limb is $21^h\ 22^m\ 49^s{\cdot}91$, at its upper transit at Greenwich, and the variation for 1 hour of longitude is $126^s{\cdot}62$: Required the Right Ascension of the limb at its upper transit at Paris. Paris is $9^m\ 20^s{\cdot}6$, or $0^h{\cdot}156$, East of Greenwich; therefore, multiplying $126^s{\cdot}62$ by $0{\cdot}156$, and subtracting the product $19^s{\cdot}75$ from $21^h\ 22^m\ 49^s{\cdot}91$, we have $21^h\ 22^m\ 30^s{\cdot}16$, for the Right Ascension at Paris.

In a similar manner the Declination may be determined at transit over any other meridian not far distant from that of Greenwich, bearing in mind that South Declinations and East Longitudes are to be considered as *negative*. Thus, in the above *Example:* The Moon's Declination at her upper Transit at Greenwich is S. $12°\ 13'\ 42''{\cdot}9$ and the "Var. of ☾'s Dec. in 1 hour of Long." is $+\ 757''{\cdot}8$, which, multiplied by $-0^h{\cdot}156$, gives $-\ 1'\ 58''{\cdot}2$, to be applied to S. or $-\ 12°\ 13'\ 42''{\cdot}9$, the Declination at the upper transit at Paris is therefore S. $12°\ 15'\ 41''{\cdot}1$.

Where an asterisk is placed opposite to a Star's name, it is intended to denote that the Star is favourably situated for observing its Declination along with that of the Moon in both Hemispheres, with a view to the accurate determination of the Moon's Parallax.

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The numbers in the column entitled "Sid. Time of ☾'s Sem. pass. mer.," express the Sidereal intervals which the Moon's Semidiameter, at the time of transit at Greenwich, takes in passing the meridian, and therefore serve to determine the Transit of the centre from an observed Transit of either limb.

Eclipses. (Pages 427 to 439.)

These pages contain all the particulars necessary for indicating the times, places, &c. on the Earth where the Eclipses of the Sun and Moon will be visible; also the Elements which have been used in the calculations.

Transit of Mercury. (Page 440.)

The contents of this page are similar to those of the Eclipses of the Sun and Moon.

*Elements of Occultations.** (Pages 441 to 450.)

These are:—1. The *Apparent* places at Greenwich Mean Midnight, of the Fixed Stars to the sixth magnitude inclusive, the occultations of which will take place above the horizon at Greenwich.

2. The *Apparent* Places of those Planets and *all* Stars to the fifth magnitude inclusive, the occultations of which will be visible at *some* part of the Earth.

3. The Greenwich Mean Time at which the Moon would, if viewed from the centre of the Earth, appear to have the same Right Ascension as the Star.

4. The difference of Declination and Position of the Moon, as it would appear with respect to the Star at the instant of conjunction in Right Ascension.

5. The parallels of Latitude *beyond* which the Star cannot be occulted by the Moon.

These Elements are useful in the calculation of an Occultation; for being referable to the Moon and Star, as seen from the centre of the Earth, they are independent of geographical position, and serve equally for all places. It is only necessary to apply the difference of longitude from Greenwich to the Greenwich Mean Time of conjunction, to find the time of conjunction at any other meridian; and it is this time to which the positions of the Moon and Star here given will equally correspond.

Thus, the position of the Moon and κ Piscium on Sept. 18, 1861, at $4^h\ 15^m\ 43^s$, Mean Time at Greenwich, is the position at $4^h\ 25^m\ 3^s{\cdot}6$ Mean Time at Paris, because Paris is $9^m\ 20^s{\cdot}6$ east of Greenwich.

By Limiting Parallels are to be understood those parallels of latitude beyond which an occultation cannot *possibly* occur.

Suppose an observer situate at a star, and having the Moon between him and the Earth, and that he could see the Moon projected on the Earth's disc; he would observe it moving across the disc from west to east, covering a zone whose breadth would be equal to the apparent diameter of the Moon. Now it is only within the limits of this zone that the Occultation of a Star by the Moon can take place. To

* The calculation of the circumstances of an Occultation for any particular place may be made in the manner directed by Mr. WOOLHOUSE in the Appendix to the *Nautical Almanac* for 1836; or approximately, with sufficient accuracy to suit the ordinary purposes of prediction, by Captain SHADWELL'S "Tables for facilitating the approximate prediction of Occultations and Eclipses for any particular place." Potter: Poultry, London.

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all the places through which the boundary lines pass, the Star will appear just to touch the Moon's limb; and that projected parallel of latitude, to which one of the boundary lines is a tangent, is one of the limiting parallels, while the intersection of the other boundary line with the circumference of the Earth's disc determines the other limiting parallel.

Limiting Parallels are useful to indicate whether at a given conjunction of a Star with the Moon, the positions are likely to produce an occultation in a given latitude, and thus to save considerable labour to the computer.

Thus, suppose from the times of conjunction commencing with Jan. 18, at page 441, it were required to prepare a list of Occultations for Greenwich, whose latitude is 51° 28′ 38″ N. On looking down the column of Limiting Parallels we reject at once the first star, because the Limiting Parallels do not comprise the parallel of Greenwich. On Jan. 20 we see that ε Arietis may be occulted to all the parallels of latitude between 90 N. and 12 N., which include that of Greenwich; this Star would therefore be fixed upon for calculation if no other considerations existed to cause its rejection. We observe, however, that the conjunction takes place at $3^h\ 7^m\ 50^s$, the intensity of sun-light would therefore prevent its being seen, and it would be rejected in consequence. The next Limiting Parallels having Greenwich between them, are 53 N. and 14 S., opposite 17 Tauri on the 21st, but again, sun-light would prevent its being visible; as would also be the case with 23 Tauri, η Tauri, and 27 Tauri, on the same day. On the 23rd day, 5 Geminor. may be occulted to all the parallels between 90 N. and 40 N. The time of conjunction in this instance, as regards sun-light, is favourable; if, therefore, on further inquiry, the Star be found to be above the horizon of Greenwich, we should commence the calculation. It appears, on reference to page 451, that a near approach of this star is visible at Greenwich. On January 24, δ Geminor. may be occulted between the parallels of 90 N. and 17 N.; and on reference to page 451, it will be seen that the phenomenon is visible at Greenwich.

Occultations. (Pages 451 to 453.)

These pages contain a list of the Planets and fixed Stars to the sixth magnitude inclusive, the Occultations of which by the Moon will happen when the objects are above the horizon of Greenwich, together with the Sidereal and Mean Times of the Disappearance and Reappearance, and the points on the circumference of the Moon's image, where the Star, viewed with a telescope that inverts, will disappear and reappear. By "Angle from N. Point" is to be understood the arc included between the Star, when in contact, and the point of intersection of the limb with a circle passing through the North Pole and the centre of the Moon's image; and by "Angle from Vertex," the arc between the Star at contact, and the point where a circle, passing through the zenith and the Moon's centre, intersects the limb. These latter angles will be found very useful in observing Occultations of small stars with a telescope not mounted equatorially; and, for the observation of a reappearance, a knowledge of the angle is absolutely necessary to enable the observer to direct his attention to the point of the Moon's limb where the Star will reappear. In some instances, Occultations have been inserted, which taking place in, or near to, the horizon of Greenwich, are not visible there, but may be visible at places not far distant from Greenwich.

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Jupiter's Satellites, Eclipses, &c. (Pages 454 to 473.)

These pages contain the Mean Times of the Eclipses, Occultations, Transits, and Transits of Shadows, of the Satellites of Jupiter, together with diagrams exhibiting the position of each Satellite with respect to the disc of the Planet at the moment of Disappearance or Reappearance, as it will appear in an inverting telescope. These diagrams have been laid down from calculations made for the eclipse nearest to the middle of each month; but they will serve very well for the whole of the month, *except near opposition*, the change in the position of Jupiter and his Shadow in the interval being too small to be appreciable by the eye, as is evident by comparing the Phases for any two successive months. All the Eclipses which happen when Jupiter is 8° *above* and the Sun 8° *below* the horizon of Greenwich, are marked with an asterisk to indicate that they are visible at that place; and those which happen when Jupiter is above, and the Sun below the horizon, are marked with a dagger, as, under very favourable circumstances, they may also be observed.

"D." denotes the instant of the disappearance of the Satellite, by entering into the shadow of Jupiter; and "R." the instant of its reappearance at coming out of the shadow. They generally happen when the Satellite is apparently at some distance from the body of Jupiter, except near the opposition of Jupiter to the Sun, when the eclipse takes place near to the body of the planet. Before the opposition, the Disappearances and Reappearances happen on the Western side, but after opposition on the Eastern side, of the planet: with an inverting telescope, however, the appearances will be directly the contrary. Before the opposition, the Disappearances only of the first Satellite are visible: and after the opposition, the Reappearances only. It is seldom, also, that the Disappearance and Reappearance of the second Satellite can be observed at the same eclipse; but both phenomena are generally visible with the third and fourth Satellites.

To find the time at which the Disappearance or Reappearance of any of the Satellites will take place under any other meridian than that of Greenwich, it is merely necessary to *add* the difference of longitude (*in time*) to the time of the phenomenon at Greenwich, if the meridian be *east* of Greenwich, or to *subtract* if it be *west*, and the sum or difference will be the time required. But this determines only the instant of the occurrence of the phenomenon: Jupiter may be below the horizon at this time, or he may be above it, and the intensity of sun-light, or even the brightness of twilight, may be such as to render the Satellites invisible: it is therefore necessary to ascertain the position of the Sun and Jupiter, with respect to the horizon, at the time of the phenomenon: this may be readily accomplished by means of a celestial globe, or near enough for the purpose, by finding the times of rising and setting of the objects, with the assistance of a table of semidiurnal arcs.

The Eclipses of Jupiter's Satellites, especially of the first, afford us, perhaps, the readiest means of determining the longitude; all that is necessary to be known being the exact time of observation: the difference between this time and the time at Greenwich, shows the difference of longitude at once, and it is *east* or *west* of Greenwich, according as the time of observation is *greater* or *less* than the Greenwich time.

Suppose the Disappearance of Jupiter's first Satellite to be observed on November 11, 1861, at Paris at $16^h\ 16^m\ 12^s{\cdot}9$ Mean Time at that place: by reference to page 469, it appears that the Disappearance will take place at Greenwich at $16^h\ 6^m\ 52^s{\cdot}3$ Greenwich Mean Time; the difference, $9^m\ 20^s{\cdot}6$, is the difference of

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longitude between Greenwich and Paris; and because the Paris time is greater than that at Greenwich, we infer that Paris is to the east of Greenwich.

Independent of defects in the tables, there are difficulties attending the observation of these phenomena which unfit them for *accurate* determinations of longitude. Different telescopes give different results; and care should be taken to have recourse to those corresponding observations which have been made under circumstances the most similar, and particularly with telescopes of the same quality and power. When extreme accuracy is not required, the Eclipses of the Satellites will always afford a good approximation towards the difference of meridians, and observations of them should on no account be neglected, especially when the Disappearance and Reappearance of the same Satellite are both visible.

The times of Occultation and Transit, are only approximate. They are inserted in order to apprise Astronomers when they are about to happen, as observations of them may tend to improve the Tables of the Satellites. The instruments required to observe them with anything like precision will preclude the possibility of their ever becoming available at sea.

An asterisk signifies that the phenomenon is visible at Greenwich, and a dagger that the phenomenon *may be* visible under favourable circumstances, the limits in either case being the same as those adopted for the eclipses. "D." denotes the disappearance of the Satellite behind the disc of Jupiter, and "R." its reappearance; "I." signifies the ingress, or beginning of a transit of a Satellite, or its shadow, across the disc of Jupiter, and "E." the egress, or termination.

Jupiter's Satellites' Configurations (Pages 474 to 483).

In addition to the explanation given at the foot of the page, it may be remarked, that when two Satellites are in or near conjunction, instead of the usual symbol (♂), it has been thought better to place one above the other, without regard to their actual latitudes, but merely to distinguish them in their relation of *upper* and *lower*.

The Satellites are in the superior parts of their orbits, or have Jupiter between them and the Earth, when they are moving from West to East, or towards the right-hand of the page; but they are in the inferior parts of their orbits, or between the Earth and Jupiter, when they are moving from East to West, or towards the left-hand: in the former case Eclipses and Occultations occur, and in the latter Transits of the Satellites and their Shadows.

If an inverted telescope be directed towards Jupiter on October 30, 1861, at 17^h mean time, the Satellites will appear to an observer at Greenwich in the positions as laid down in the table. The 1st and 2nd Satellites, which are *really* to the left of the planet, will appear to the right of it; and the 3rd and 4th, which are *really* to the right, will appear to be to the left.

West and *East*, at the head of the page, are inserted to show the positions of the Satellites with respect to Jupiter, as they would appear in a telescope that does *not* invert. Jupiter being always to the south of the zenith of Greenwich, the Satellites which are here laid down on the left of Jupiter would appear to the *West*, and those on the right-hand to the *East* of the planet.

As regards their positions to the east or west, the page viewed directly, exhibits the Satellites in an inverted order; but if the leaf be turned over, and the page

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viewed from the other side, they will appear in their real positions. The simplest mode of changing the position of a Satellite from apparent to real, and *vice versâ*, is to draw a line from the Satellite through Jupiter's centre, and to place the Satellite upon this line at the same distance from the centre as before, only on the opposite side. If this operation be performed upon the Configurations as laid down in this volume, the Satellites will be reduced to their real positions.

As the Configurations are given for *mean astronomical time*, which agrees with *civil time* only from 0^h to 12^h, or from noon to midnight, when the time exceeds 12^h the excess will indicate the civil time of the succeeding day of the month.

Thus in October, 1861, the Configurations are given for 17^h mean time, but the 17th hour from noon is the same as the 5th hour from the following midnight, when a new civil day has commenced. The appearances, therefore, relate to 5^h A.M. of the day following, according to the common mode of reckoning time; that is, the Configurations at 17^h on October the 26th relate to 5^h A.M. on October the 27th.

The Configurations enable an observer to distinguish the Satellites from each other, and from Stars in the vicinity of Jupiter.

Phenomena. (Pages 484 to 487.)

In these are given the conjunctions in Right Ascension of the Planets with the Moon and with each other, and the conjunctions in Right Ascension and Declination of the Planets with certain Stars; also the times when the Planets are in those parts of their orbits most favourable for observation, with a view to the more accurate determination of their elements; and other notices, chiefly of use to the astronomer.

Saturn's Ring. (Page 488.)

In this page are given the quantities which enable us to determine the position of the Ring of Saturn at intervals of 20 days throughout the year, and whether it be visible or not. The value of p shows the position of the minor axis of the Ring with respect to a circle of declination, those of a', b', a'', b'', the Ring's apparent magnitude, and a comparison of those of l and l', its visibility or otherwise. For the plane of the Ring to be *visible*, it is necessary that the Sun and the Earth should be elevated on the same side of it, which is the case until November 23, 1861. The circumstances which determine the *invisibility* of the Ring are, 1st, when its plane passes through the centre of the Sun, or $l' = 0$; 2nd, when it passes through the centre of the Earth, or $l = 0$, and at this time b', also $= 0$; 3rd, when the Sun and Earth are on different sides of the plane of the Ring, for the Earth in this case will have the unilluminated side of the Ring turned towards it.

Moon's Libration, &c. (Page 489.)

This page contains the *Mean Time of the greatest Libration of the Moon's Apparent Disc;* and the *Illuminated portion of the Discs of Venus and Mars* at the middle of each month.

Tides. (Pages 490 to 493.)

The Mean Time of High Water at London Bridge is here given for every day of the year, on the assumption that the time of high water on full and change days, or

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the *Establishment of the Port*, is $2^h\ 7^m$. The first high tide which happens after Mean Noon of any day is inserted in the 1st column, and the second in the 2nd column. Where a line (—) is inserted, it indicates that there is only *one* high tide on that day. Thus on January 23 there is only one high tide: it occurs at $11^h\ 50^m$, but the succeeding high tide does not take place until 24^m after mean noon of January 24.

The times of high water at full and change of the Moon, as given at pages 492 and 493, are reckoned from *Apparent* Noon: they represent the *Establishments of the Ports*, that is, the *actual times* of High Water *when the Moon passes the meridian at the same time as the Sun;* or the *intervals* between the times of Transit of the Moon and the times of High Water *on full and change days.* They serve to determine the time of high water on any other day at those places in the usual manner.

This Table was revised by the Admiralty Hydrographic Office, for the NAUTICAL ALMANAC, 1859.

Tables. (Pages 494 to 508.)

In page 494 is given a Table showing the Correction required on account of Second Differences in finding the Greenwich Time corresponding to a reduced Lunar Distance.

The use of this Table has been sufficiently explained, by the Examples given at page 519.

In pages 495 to 497 are given Tables for determining the Latitude by Observations of the Pole Star out of the Meridian. The method of using them is as follows:

From the observed altitude, when corrected for the error of the instrument, refraction, and dip of the horizon, subtract 1′.

Reduce the Mean Time of Observation at the place to the corresponding Sidereal Time, by the Table given at page 498.—(See *Tables of Time Equivalents*, following this article.)

With the Sidereal Time found, take out the *first correction*, with its proper sign. If the sign be +, the correction must be *added* to the reduced altitude; but if it be —, it must be *subtracted;* in either case the result will give an Approximate Latitude.

With the Altitude and Sidereal Time of observation, take out the *second correction;* and with the day of the month and the same Sidereal time, take out the *third correction.* These two corrections *added* to the Approximate Latitude, will give the Latitude of the place.

Example. On March 6, 1861, in Longitude 37° W. at $7^h\ 43^m\ 35^s$ Mean Time, suppose the altitude of the Pole Star, when corrected for the error of the instrument, refraction, and dip of the horizon, to be 46° 17′ 28″: Required the latitude.

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	h	m	s
Mean Time - - - - - - -	7	43	35
Diff. Long. (37°) in time - -	2	28	0
Greenwich Mean Time - - -	10	11	35

	h	m	s
Sidereal Time at Greenwich Mean Noon -	22	56	48
Mean Time at Place - - - - - - - - -	7	43	35
Acceleration (Tab. page 498) for $10^h\ 12^m$ -		1	41
Sidereal Time of Observation - - - - -	6	42	4

	°	′	″
Corrected Altitude - - - - - - - - -	46	17	28
Subtract - - - - - - - - -		1	0
Reduced Altitude - - - - - - - - -	46	16	28
With *Argument* $6^h\ 42^m\ 4^s$, *First Correction* —	0	9	43
Approximate Latitude - - - - - - - - -	46	6	45
Arguments, 46° 17′, $6^h\ 42^m$ } *Second Correction*	+1	6	
Arguments, March 6, 1861. $6^h\ 42^m$ } *Third Correction*	+1	10	
Latitude of the place - - - N.	46	9	1

The *Tables of Time Equivalents*, given at pages 498 to 501, are useful for converting Mean Time into Sidereal Time, and Sidereal into Mean Time, agreeably to the example annexed to each table. They will serve also for Tables of Acceleration and Retardation, by taking the difference between each argument and its equivalent. Thus, in the Table at pages 498 and 499, the *excess* of the sidereal time equivalents above the arguments of mean time shows the *acceleration* of sidereal on mean solar intervals; and in the Table at pages 500 and 501, the *defect* of the mean time equivalents, as compared with the arguments of sidereal time, indicates the *retardation* of mean on sidereal intervals.

The concluding Table, at pages 502 to 508, contains a revised list of the *Latitudes and Longitudes of the principal Public and Private Observatories.*

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SUPPLEMENT

TO

THE NAUTICAL ALMANAC,

FOR THE YEAR

1861.

THIS Supplement contains —

Elements of Ceres, Pallas, Juno, Vesta, and most of the newly discovered minor planets, with the sources from whence they were obtained.

Ephemerides derived from the above Elements perturbed to the respective dates, of Ceres, Pallas, Juno, and Vesta, for the year 1858, adapted to the meridian of Greenwich, approximate at intervals of six days, and accurate at each transit near the times of their respective oppositions.

Ephemerides of most of the newly discovered minor planets for the year 1858, adapted to the meridian of Greenwich, approximate for each tenth day of the year; those of Leucothea and Leda, which are probably less accurate than the others, are given from the best available elements, in consequence of these Planets not having been observed at their last oppositions.

Ephemeris of Neptune for the year 1858, adapted to the meridian of Greenwich, accurate for each fifth day of the year.

J. R. HIND,
Superintendent of the Nautical Almanac.

Nautical Almanac Office,
September 26, 1857.

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	① CERES.	② PALLAS.	③ JUNO.	④ VESTA.
	1858, June 10^d·0 M. T. at Greenwich.	1858, May 29^d·0 M. T. at Greenwich.	1858, Jan. 29^d·0 M. T. at Greenwich.	1858, Apr. 23^d·0 M. T. at Greenwich.
	° ′ ″	° ′ ″	° ′ ″	° ′ ″
ε	249 31 26·2	224 28 25·5	104 2 31·1	218 26 1·1
ϖ	149 25 51·4	122 7 38·4	54 0 55·8	250 35 29·4
ν	80 48 57·5	172 38 32·7	170 58 22·0	103 21 10·3
i	10 36 30·9	34 42 29·8	13 3 9·8	7 8 9·1
φ	4 34 48·6	13 50 57·1	14 50 35·7	5 10 31·2
	″	″	″	″
n	770·84517	769·47800	813·88476	977·84322
log. a	0·4420268	0·4425408	0·4262963	0·3731587
	d h m	d h m	d h m	d h m
δ	1858, June 8 20 31	1858, May 26 18 22	1858, Feb. 1 12 8	1858, Apr. 22 5 11
Intens. of Light	0·926	0·503	1·800	1·514
	Nautical Almanac, 1860, page 576, with addition of perturbations by Venus, the Earth, Mars, Jupiter, and Saturn.	*Nautical Almanac*, 1860, page 576, with addition of perturbations by Venus, the Earth, Mars, Jupiter, and Saturn.	*Nautical Almanac*, 1859, page 566, with addition of perturbations by Venus, the Earth, Mars, Jupiter, and Saturn.	*Nautical Almanac*, 1860, page 576, with addition of perturbations by Venus, the Earth, Mars, Jupiter, and Saturn.

	⑤ ASTRÆA.	⑥ HEBE.	⑦ IRIS.	⑧ FLORA.	⑨ METIS.
	1859, Mar. 1^d·0 M. T. at Green^h.	1858, May 8^d·0 M. T. at Berlin.	1857, Apr. 19^d·0 M. T. at Berlin.		1857, Dec. 5^d·5 M. T. at Berlin.
	° ′ ″	° ′ ″	° ′ ″		° ′ ″
ε	159 43 26·6	242 1 33·1	200 41 2·0		72 54 6·5
ϖ	135 5 40·3	15 7 48·8	41 23 12·3	Ephemeris	71 5 47·2
ν	141 26 15·7	138 35 29·0	259 44 39·0	deduced	68 31 5·9
i	5 19 8·1	14 46 24·5	5 27 56·4	from	5 36 0·3
φ	10 44 11·0	11 37 7·7	13 20 29·4	Dr. Brünnow's	7 5 52·9
	″	″	″	*Tafeln der Flora.*	″
n	857·31520	938·97625	962·28126		962·4816
log. a.	0·4112445	0·3849019	0·377803		0·3777433
	Nautical Almanac, 1860, page 576, with addition of approximate perturbations by Jupiter.	Communicated by Dr. Luther to the Superintendent.	*Berliner Astron. Jahrbuch*, 1858, page 406.		*Astronomische Nachrichten*, No. 1042.

	⑩ HYGEIA.	⑪ PARTHENOPE.	⑫ VICTORIA.	⑮ EGERIA.	⑭ IRENE.
	1857, Oct. 13^d·0 M. T. at Green^h.	1858, June 27^d·0 M. T. at Berlin.	1857, Aug. 2^d·0 M. T. at Green^h.	1857, June 15^d·0 M. T. at Berlin.	1853, Dec. 25^d·0 M. T. at Berlin.
	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
ε	25 49 27·8	283 57 32·2	312 33 52·4	259 47 22·8	89 30 12·9
ϖ	230 42 54·1	316 10 57·5	301 56 36·0	119 35 3·1	178 30 31·4
ν	287 17 3·5	125 4 26·9	235 33 34·9	43 18 27·1	86 51 16·1
i	3 46 50·5	4 36 57·6	8 23 1·5	16 32 23·6	9 6 30·5
φ	5 39 9·1	5 40 30·3	12 34 52·0	5 0 45·5	9 40 29·6
	″	″	″	″	″
n	631·84214	923·78243	994·81406	858·06059	852·468
log. a.	0·4995992	0·3896250	0·3681770	0·4109929	0·4128862
	Berliner Astron. Jahrbuch, 1858, page 406, with addition of approximate perturbations by Jupiter..	Communicated by Dr. Luther to the Superintendent.	*Berliner Astron. Jahrbuch*, 1858, page 406, with addition of approximate perturbations by Jupiter.	*Astronomische Nachrichten*, No. 1024.	*Astronomische Nachrichten*, No. 928.

The Longitudes are reckoned from the Mean Equinoxes of the respective epochs.

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	⑭ EUNOMIA.	⑮ PSYCHE.	⑰ THETIS.	⑱ MELPOMENE.	⑲ FORTUNA.
	1858, Jan. 29^d·0 M. T. at Green^h.	1855, Nov. 26^d·0 M. T. at Berlin.	1857, Sept. 7^d·0 M. T. at Green^h.	1858, Mar. 6^d·0 M. T. at Green^h.	1858, Mar. 6^d·0 M. T. at Green^h.
	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
ε	131 45 1·9	51 35 24·8	342 20 9·0	167 39 20·9	149 16 50·5
ϖ	27 27 25·5	12 40 34·3	259 33 21·6	15 9 58·0	30 23 30·5
ν	293 56 14·3	150 32 48·5	125 26 29·6	150 4 30·7	211 25 0·2
i	11 43 39·8	3 4 7·6	5 35 25·8	10 8 58·6	1 32 33·7
φ	10 49 37·7	7 44 14·8	7 16 10·8	12 33 31·8	9 5 14·3
	″	″	″	″	″
n	825·73519	710·0571	912·5840	1020·1256	930·1826
log. a.	0·4221110	0·4658089	0·3931564	0·3609023	0·3876261
	Berliner Astron. Jahrbuch, 1858, page 406, with addition of approximate perturbations by Jupiter.	*Astronomische Nachrichten*, No. 982.	*Nautical Almanac*, 1859, page 566, with addition of approximate perturbations by Venus, the Earth, Mars, Jupiter, & Saturn.	*Berliner Astron. Jahrbuch*, 1858, page 407, with addition of approximate perturbations by Jupiter.	*Astronomische Nachrichten*, No. 1096, with addition of approximate perturbations by Jupiter.

	⑳ MASSILIA.	㉑ LUTETIA.	㉒ CALLIOPE.	㉓ THALIA.	㉔ THEMIS.
	1856, Nov. 4^d·0 M. T. at Berlin.	1857, Dec. 24^d·0 M. T. at Green^h.	1860, Jan. 0^d·0 M. T. at Berlin.	1857, Oct. 13^d·0 M. T. at Green^h.	1857, Dec. 24^d·0 M. T. at Green^h.
	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
ε	54 45 59·6	153 14 24·5	224 46 26·6	133 10 27·3	110 19 14·0
ϖ	98 16 29·7	326 31 44·8	56 34 13·1	123 51 19·4	138 54 29·1
ν	206 36 23·9	80 29 37·6	66 36 21·8	67 37 4·9	36 7 27·9
i	0 41 9·7	3 5 21·1	13 45 28·4	10 13 18·1	0 48 57·7
φ	8 15 39·1	9 20 5·6	5 51 7·4	13 22 54·0	6 41 30·0
	″	″	″	″	″
n	948·8449	934·17921	714·95583	832·84156	636·60257
log. a.	0·3818473	0·3863848	0·4638182	0·4196300	0·4974260
	Berliner Astron. Jahrbuch, 1858, page 407.	*Nautical Almanac*, 1859, page 566, with addition of approximate perturbations by Venus, the Earth, Mars, Jupiter, & Saturn.	*Astronomische Nachrichten*, No. 1104.	*Berliner Astron. Jahrbuch*, 1858, page 407, with addition of approximate perturbations by Jupiter.	*Berliner Astron. Jahrbuch*, 1858, page 407, with addition of approximate perturbations by Jupiter.

	㉕ PHOCÆA.	㉘ PROSERPINE.	㉗ EUTERPE.	㉘ BELLONA.	㉙ AMPHITRITE.
	1857, July 10^d·0 M. T. at Berlin.	1858, Aug. 3^d·0 M. T. at Green^h.	1858, Feb. 10^d·0 M. T. at Berlin.	1854, Mar. 0^d·0 M. T. at Berlin.	1858, Mar. 27^d·0 M. T. at Berlin.
	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
ε	294 46 13·5	295 26 25·9	126 41 17·7	159 1 57·3	180 1 12·6
ϖ	302 46 9·0	235 3 43·2	87 29 25·3	122 18 36·6	56 29 5·0
ν	214 4 54·6	45 54 19·7	93 43 53·1	144 43 14·7	356 26 33·7
i	21 35 53·6	3 35 39·4	1 35 31·5	9 22 32·8	6 7 52·3
φ	14 37 38·8	5 0 44·3	9 57 36·0	8 53 54·0	4 9 50·7
	″	″	″	″	″
n	953·67798	819·9210	987·16339	767·5226	869·18418
log. a.	0·3804037	0·4241569	0·3704123	0·4432769	0·4072637
	Astronomische Nachrichten, No. 1089.	*Astronomische Nachrichten*, No. 1064, with approximate perturbations by Jupiter.	*Astronomische Nachrichten*, No. 1055.	*Astronomische Nachrichten*, No. 949.	*Astronomische Nachrichten*, No. 1078.

The Longitudes are reckoned from the Mean Equinoxes of the respective epochs.

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	(20) URANIA.	(21) EUPHROSYNE.	(22) POMONA.	(23) POLYHYMNIA.	(24) CIRCE.
	1857, May 15^{d}·0 M. T. at Berlin.	1855, Jan. 0^{d}·0 M. T. at Berlin.	1857, June 27^{d}·0 M. T. at Green^{h}.	1855, Jan. 0^{d}·0 M. T. at Berlin.	1855, Apr. 9^{d}·7 M. T. at Berlin.
	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
ε	241 5 32·1	53 49 50·3	271 53 14·9	23 5 48·3	193 1 14·7
ϖ	31 15 29·0	93 51 6·6	195 42 33·5	340 41 55·8	147 53 32·1
ν	308 12 59·2	31 25 23·0	220 49 37·6	9 14 30·4	184 49 14·1
i	2 5 57·4	26 25 12·4	5 29 14·0	1 56 48·0	5 26 55·5
φ	7 14 13·6	12 28 29·8	4 41 15·8	19 44 7·9	6 25 35·8
	″	″	″	″	″
n	976·32283	632·80310	854·67459	731·82602	806·685
log. a.	0·3736093	0·499159	0·4121377	0·4570658	0·4288689
	Astronomische Nachrichten, No. 1024.	*Astronomische Nachrichten*, No. 979.	*Astronomische Nachrichten*, No. 984, with addition of approximate perturbations by Jupiter and Saturn.	*Astronomische Nachrichten*, No. 1068.	*Astronomische Nachrichten*, No. 1035.

	(25) LEUCOTHEA.	(26) ATALANTA.	(27) FIDES.	(28) LEDA.	(29) LÆTITIA.
	1855, May 0^{d}·0 M. T. at Berlin.	1856, Jan. 0^{d}·0 M. T. at Berlin.	1856, Jan. 0^{d}·0 M. T. at Green^{h}.	1856, Jan. 0^{d}·0 M. T. at Berlin.	1856, Jan. 1^{d}·0 M. T. at Berlin.
	° ′ ″	° ′ ″	° ′ ″	° ′ ″	° ′ ″
ε	197 49 30·5	36 21 7·1	42 35 5·9	112 55 7·2	146 44 19·6
ϖ	198 17 0·2	42 23 47·8	66 4 28·2	100 40 28·4	1 58 57·6
ν	356 24 37·9	359 9 29·5	8 9 37·4	296 27 47·3	157 19 30·9
i	8 15 17·7	18 42 9·1	3 7 10·5	6 58 31·8	10 20 50·7
φ	12 30 13·5	17 20 52·1	10 4 20·7	8 57 0·8	6 22 38·2
	″	″	″	″	″
n	691·93133	778·09632	826·1750	782·4484	769·8940
log. a.	0·473296	0·4393154	0·421957	0·4377005	0·4423837
	Astronomische Nachrichten, No. 1011.	*Astronomische Nachrichten*, No. 1042.	*Astronomische Nachrichten*, No. 1058.	*Astronomische Nachrichten*, No. 1078.	*Astronomische Nachrichten*, No. 1080.

	(30) HARMONIA.	(31) DAPHNE.	(32) ISIS.	(33) ARIADNE. (34) NYSA. (35) to (37)	NEPTUNE.
	1856, July 1^{d}·0 M. T. at Berlin.		1856, July 1^{d}·0 M. T. at Berlin.		
	° ′ ″		° ′ ″		
ε	222 12 9·0		276 45 1·9		
ϖ	2 1 50·8		317 57 48·4		
ν	93 32 2·8	Not yet determined with sufficient accuracy.	84 27 49·7	Not yet determined with sufficient accuracy.	Ephemeris deduced from M. Kowalski's *Recherches sur les Mouvements de Neptune, suivies des Tables de cette Planète.*
i	4 15 48·4		8 34 39·6		
φ	2 38 29·0		12 52 50·1		
	″		″		
n	1039·410		934·449		
log. a.	0·355480		0·3863006		
	Astronomische Nachrichten, No. 1050.		*Astronomische Nachrichten*, No. 1086.		

The Longitudes are reckoned from the Mean Equinoxes of the respective epochs.

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MEAN TIME.

Month and Day.	Geocentric. Right Ascension. Noon.	Declination. Noon.	Log. of Dist. from the Earth. Noon.	Meridian Passage.	Heliocentric. Longitude. Noon.	Latitude. Noon.	Log. of Rad. Vect. Noon.
1857.	h m	° ′		h m	° ′	° ′	
Dec. 30	15 47·4	S. 14 42	0·5253	21 9·8	224 0	N. 6 24	0·4298
1858.							
Jan. 5	15 56·9	15 17	0·5188	20 55·6	225 21	6 12	0·4306
11	16 6·2	15 48	0·5115	20 41·3	226 41	6 0	0·4314
17	16 15·3	16 17	0·5036	20 26·7	228 1	5 48	0·4322
23	16 24·1	16 44	0·4952	20 11·9	229 21	5 35	0·4329
29	16 32·7	17 8	0·4862	19 56·8	230 40	5 22	0·4337
Feb. 4	16 41·0	17 29	0·4765	19 41·5	231 59	5 10	0·4345
10	16 49·0	17 49	0·4663	19 25·8	233 18	4 57	0·4353
16	16 56·6	18 7	0·4555	19 9·7	234 36	4 44	0·4361
22	17 3·7	18 22	0·4441	18 53·1	235 54	4 31	0·4369
28	17 10·4	18 36	0·4322	18 36·1	237 12	4 18	0·4376
Mar. 6	17 16·6	18 49	0·4198	18 18·5	238 29	4 5	0·4384
12	17 22·1	19 1	0·4069	18 0·4	239 46	3 51	0·4392
18	17 27·0	19 12	0·3937	17 41·6	241 3	3 37	0·4400
24	17 31·2	19 23	0·3801	17 22·1	242 19	3 24	0·4408
30	17 34·7	19 33	0·3662	17 1·8	243 35	3 10	0·4416
Apr. 5	17 37·3	19 43	0·3525	16 40·8	244 51	2 57	0·4423
11	17 39·0	19 55	0·3387	16 18·8	246 7	2 43	0·4431
17	17 39·8	20 6	0·3252	15 55·9	247 22	2 30	0·4439
23	17 39·6	20 18	0·3121	15 32·0	248 37	2 17	0·4447
29	17 38·5	20 31	0·2998	15 7·2	249 51	2 3	0·4454
May 5	17 36·4	20 45	0·2884	14 41·3	251 6	1 49	0·4462
11	17 33·3	20 59	0·2785	14 14·7	252 20	1 35	0·4469
17	17 29·4	21 14	0·2700	13 47·2	253 34	1 21	0·4477
23	17 24·7	21 29	0·2634	13 18·9	254 47	1 8	0·4484
29	17 19·4	21 44	0·2590	12 50·0	256 0	0 54	0·4492
June 4	17 13·8	21 59	0·2567	12 20·8	257 13	0 41	0·4499
10	17 8·0	22 13	0·2570	11 51·4	258 26	0 27	0·4506
16	17 2·2	22 27	0·2595	11 22·0	259 39	N. 0 13	0·4513
22	16 56·7	22 40	0·2645	10 53·0	260 51	0 0	0·4520
28	16 51·6	22 52	0·2715	10 24·4	262 3	S. 0 14	0·4527
July 4	16 47·2	23 5	0·2805	9 56·4	263 15	0 27	0·4534
10	16 43·6	23 17	0·2911	9 29·3	264 26	0 40	0·4541
16	16 40·8	23 30	0·3031	9 3·0	265 38	0 54	0·4548
22	16 39·0	23 43	0·3162	8 37·7	266 49	1 7	0·4555
28	16 38·2	23 56	0·3301	8 13·3	268 0	1 20	0·4562
August 3	16 38·3	24 10	0·3445	7 49·9	269 10	1 33	0·4568
9	16 39·3	24 24	0·3593	7 27·4	270 21	1 46	0·4575
15	16 41·2	24 39	0·3740	7 5·7	271 31	1 59	0·4581
21	16 43·9	24 55	0·3888	6 44·8	272 41	2 12	0·4588
27	16 47·4	25 11	0·4034	6 24·8	273 51	2 25	0·4594
Sept. 2	16 51·7	S. 25 27	0·4178	6 5·5	275 1	S. 2 38	0·4600

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MEAN TIME.

Month and Day.	Geocentric. Right Ascension. Noon.	Declination. Noon.	Log. of Dist. from the Earth. Noon.	Meridian Passage.	Heliocentric. Longitude. Noon.	Latitude. Noon.	Log. of Rad. Vect. Noon.
	h m	° ′		h m	° ′	° ′	
Sept. 2	16 51·7	S. 25 27	0·4178	6 5·5	275 1	S. 2 38	0·4600
8	16 56·7	25 43	0·4318	5 46·9	276 11	2 50	0·4606
14	17 2·2	25 58	0·4454	5 28·8	277 20	3 3	0·4612
20	17 8·4	26 13	0·4584	5 11·4	278 29	3 15	0·4617
26	17 15·1	26 27	0·4710	4 54·5	279 38	3 27	0·4623
Oct. 2	17 22·3	26 40	0·4830	4 38·1	280 47	3 39	0·4629
8	17 29·9	26 52	0·4945	4 22·1	281 56	3 51	0·4635
14	17 37·9	27 3	0·5053	4 6·5	283 5	4 3	0·4640
20	17 46·3	27 12	0·5156	3 51·2	284 14	4 15	0·4645
26	17 55·1	27 19	0·5252	3 36·4	285 22	4 27	0·4650
Nov. 1	18 4·1	27 25	0·5342	3 21·8	286 30	4 39	0·4655
7	18 13·4	27 28	0·5426	3 7·5	287 38	4 50	0·4660
13	18 22·9	27 29	0·5504	2 53·4	288 46	5 1	0·4665
19	18 32·6	27 28	0·5576	2 39·5	289 54	5 12	0·4670
25	18 42·5	27 25	0·5641	2 25·7	291 2	5 23	0·4675
Dec. 1	18 52·6	27 19	0·5700	2 12·2	292 10	5 34	0·4679
7	19 2·8	27 11	0·5753	1 58·7	293 18	5 45	0·4683
13	19 13·0	27 1	0·5799	1 45·3	294 25	5 55	0·4687
19	19 23·3	26 48	0·5840	1 32·0	295 33	6 5	0·4691
25	19 33·7	26 32	0·5874	1 18·7	296 40	6 15	0·4695
31	19 44·0	26 14	0·5902	1 5·4	297 48	6 25	0·4699
37	19 54·4	S. 25 55	0·5924	0 52·2	298 55	S. 6 35	0·4703

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Hor. Par.
	h m s	h m s	s	South. ° ′ ″	South. ° ′ ″	″	″
Apr. 23	17 39 18·06	17 39 9·65	0·31	20 18 24·4	20 20 30·3	5·2	4·2
25	17 38 59·60	17 38 47·94	0·45	20 22 37·6	20 24 46·2	5·3	4·2
27	17 38 34·65	17 38 19·74	0·59	20 26 56·1	20 29 7·3	5·4	4·2
29	17 38 3·22	17 37 45·08	0·72	20 31 19·9	20 33 33·7	5·5	4·3
May 1	17 37 25·34	17 37 4·00	0·86	20 35 48·7	20 38 5·0	5·6	4·3
3	17 36 41·07	17 36 16·55	0·99	20 40 22·5	20 42 41·2	5·7	4·3
5	17 35 50·46	17 35 22·81	1·12	20 45 1·1	20 47 22·0	5·8	4·4
7	17 34 53·61	17 34 22·89	1·25	20 49 44·0	20 52 7·1	5·9	4·4
9	17 33 50·66	17 33 16·96	1·37	20 54 31·1	20 56 56·1	6·0	4·4
11	17 32 41·79	17 32 5·19	1·50	20 59 21·9	21 1 48·5	6·1	4·5
13	17 31 27·20	17 30 47·85	1·61	21 4 15·9	21 6 43·9	6·2	4·5
15	17 30 7·16	17 29 25·18	1·72	21 9 12·6	21 11 41·9	6·2	4·5
17	17 28 41·94	17 27 57·49	1·83	21 14 11·6	21 16 41·8	6·2	4·6
19	17 27 11·87	17 26 25·12	1·92	21 19 12·2	21 21 43·0	6·3	4·6
21	17 25 37·28	17 24 48·40	2·01	21 24 13·8	21 26 44·8	6·3	4·6
23	17 23 58·52	17 23 7·71	2·10	21 29 15·8	21 31 46·6	6·3	4·7
25	17 22 16·00	17 21 23·45	2·17	21 34 17·3	21 36 47·7	6·3	4·7
27	17 20 30·10	17 19 36·00	2·24	21 39 17·8	21 41 47·5	6·2	4·7
29	17 18 41·21	17 17 45·79	2·30	21 44 16·8	21 46 45·4	6·2	4·7
31	17 16 49·79	17 15 53·27	2·34	21 49 13·5	21 51 40·9	6·2	4·7
June 2	17 14 56·28	17 13 58·89	2·38	21 54 7·6	21 56 33·5	6·1	4·7
4	17 13 1·14	17 12 3·11	2·41	21 58 58·6	22 1 22·8	6·0	4·7
6	17 11 4·86	17 10 6·46	2·43	22 3 46·1	22 6 8·5	6·0	4·7
♂ 8	17 9 7·97	17 8 9·45	2·44	22 8 30·0	22 10 50·5	5·9	4·7
10	17 7 10·98	17 6 12·62	2·43	22 13 10·0	22 15 28·5	5·8	4·7
12	17 5 14·45	17 4 16·51	2·42	22 17 46·0	22 20 2·5	5·7	4·7
14	17 3 18·88	17 2 21·61	2·39	22 22 18·0	22 24 32·5	5·6	4·7
16	17 1 24·79	17 0 28·47	2·36	22 26 46·0	22 28 58·6	5·5	4·7
18	16 59 32·70	16 58 37·54	2·31	22 31 10·2	22 33 20·9	5·5	4·7
20	16 57 43·05	16 56 49·28	2·26	22 35 30·8	22 37 39·7	5·4	4·7
22	16 55 56·29	16 55 4·13	2·19	22 39 47·9	22 41 55·3	5·3	4·7
24	16 54 12·85	16 53 22·48	2·12	22 44 1·9	22 46 7·9	5·3	4·7
26	16 52 33·08	16 51 44·68	2·04	22 48 13·2	22 50 17·9	5·2	4·6
28	16 50 57·34	16 50 11·08	1·95	22 52 22·1	22 54 25·9	5·2	4·6
30	16 49 25·95	16 48 41·99	1·86	22 56 29·2	22 58 32·2	5·1	4·6
July 2	16 47 59·23	16 47 17·72	1·76	23 0 34·9	23 2 37·4	5·1	4·5
4	16 46 37·48	16 45 58·56	1·65	23 4 39·8	23 6 42·1	5·1	4·5
6	16 45 20·97	16 44 44·75	1·54	23 8 44·5	23 10 46·9	5·1	4·5
8	16 44 9·93	16 43 36·53	1·42	23 12 49·5	23 14 52·3	5·1	4·4
10	16 43 4·58	16 42 34·11	1·30	23 16 55·4	23 18 58·9	5·1	4·4
12	16 42 5·13	16 41 37·66	1·18	23 21 2·8	23 23 7·2	5·2	4·4
14	16 41 11·72	16 40 47·31	1·05	23 25 12·1	23 27 17·5	5·2	4·3
16	16 40 24·46	16 40 3·18	0·92	23 29 23·7	23 31 30·5	5·3	4·3

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Hor. Par.
	h m s	h m s	— s	*South.* ° ′ ″	*South.* ° ′ ″	— ″	″
July 18	16 39 43·47	16 39 25·33	0·79	23 33 38·0	23 35 46·3	5·3	4·2
20	16 39 8·77	16 38 53·78	0·66	23 37 55·3	23 40 5·2	5·4	4·2
22	16 38 40·38	16 38 28·56	0·53	23 42 15·9	23 44 27·5	5·5	4·1
24	16 38 18·32	16 38 9·66	0·39	23 46 39·9	23 48 53·3	5·5	4·1
26	16 38 2·57	16 37 57·05	0·26	23 51 7·6	23 53 22·9	5·6	4·0
28	16 37 53·11	16 37 50·71	0·13	23 55 39·1	23 57 56·3	5·7	4·0
30	16 37 49·88	16 37 50·59	0·00	24 0 14·6	24 2 33·8	5·8	4·0
			+				
Aug. 1	16 37 52·86	16 37 56·66	0·13	24 4 54·0	24 7 15·3	5·9	3·9
3	16 38 2·01	16 38 8·88	0·25	24 9 37·5	24 12 0·8	5·9	3·9
5	16 38 17·27	16 38 27·17	0·38	24 14 25·1	24 16 50·4	6·0	3·9
7	16 38 38·58	16 38 51·48	0·51	24 19 16·7	24 21 43·9	6·1	3·8
9	16 39 5·87	16 39 21·74	0·63	24 24 12·1	24 26 41·3	6·2	3·8
11	16 39 39·07	16 39 57·85	0·75	24 29 11·3	24 31 42·3	6·3	3·7
13	16 40 18·06	16 40 39·70	0·87	24 34 14·0	24 36 46·6	6·3	3·7
15	16 41 2·76	16 41 27·20	0·99	24 39 19·9	24 41 53·9	6·4	3·6
17	16 41 53·02	16 42 20·21	1·10	24 44 28·6	24 47 3·9	6·5	3·6
19	16 42 48·73	16 43 18·59	1·22	24 49 39·9	24 52 16·4	6·5	3·5
21	16 43 49·76	16 44 22·24	1·33	24 54 53·4	24 57 30·9	6·6	3·5
23	16 44 55·97	16 45 30·99	1·43	25 0 8·8	25 2 47·1	6·6	3·5
25	16 46 7·25	16 46 44·75	1·54	25 5 25·7	25 8 4·5	6·6	3·4
27	16 47 23·46	16 48 3·39	1·64	25 10 43·6	25 13 22·7	6·6	3·4
29	16 48 44·51	16 49 26·81	1·74	25 16 2·0	25 18 41·3	6·6	3·4
31	16 50 10·28	16 50 54·90	1·84	25 21 20·5	25 23 59·7	6·6	3·3
Sept. 2	16 51 40·66	16 52 27·56	1·93	25 26 38·9	25 29 17·8	6·6	3·3
4	16 53 15·57	16 54 4·69	2·02	25 31 56·6	25 34 35·1	6·6	3·3
6	16 54 54·89	16 55 46·18	2·11	25 37 13·2	25 39 50·9	6·6	3·2
8	16 56 38·53	16 57 31·93	2·20	25 42 28·2	25 45 4·9	6·5	3·2
10	16 58 26·36	16 59 21·82	2·28	25 47 41·0	25 50 16·4	6·5	3·2
12	17 0 18·28	17 1 15·74	2·37	25 52 51·2	25 55 25·2	6·4	3·1
14	17 2 14·17	17 3 13·56	2·45	25 57 58·3	26 0 30·4	6·4	3·1

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MEAN TIME.

Month and Day.	Geocentric. Right Ascension. Noon.	Declination. Noon.	Log. of Dist. from the Earth. Noon.	Meridian Passage.	Heliocentric. Longitude. Noon.	Latitude. Noon.	Log. of Rad. Vect. Noon.
1857.	h m	° ′		h m	° ′	° ′	
Dec. 30	15 37·5	N. 1 46	0·5073	20 59·9	214 24	N.24 46	0·4314
1858.							
Jan. 5	15 46·8	2 6	0·5011	20 45·5	215 42	25 18	0·4338
11	15 55·8	2 31	0·4946	20 30·9	217 1	25 50	0·4362
17	16 4·6	3 1	0·4876	20 16·0	218 19	26 21	0·4386
23	16 13·0	3 37	0·4801	20 0·7	219 37	26 51	0·4410
29	16 21·0	4 18	0·4723	19 45·0	220 55	27 19	0·4433
Feb. 4	16 28·6	5 5	0·4642	19 29·0	222 12	27 47	0·4456
10	16 35·8	5 57	0·4558	19 12·5	223 29	28 14	0·4479
16	16 42·5	6 54	0·4472	18 55·5	224 46	28 40	0·4501
22	16 48·7	7 56	0·4384	18 37·9	226 3	29 4	0·4524
28	16 54·3	9 2	0·4295	18 19·8	227 20	29 28	0·4546
March 6	16 59·2	10 13	0·4206	18 1·0	228 37	29 51	0·4568
12	17 3·4	11 29	0·4118	17 41·6	229 53	30 13	0·4589
18	17 6·9	12 48	0·4032	17 21·4	231 9	30 34	0·4610
24	17 9·7	14 9	0·3948	17 0·4	232 25	30 54	0·4631
30	17 11·6	15 32	0·3868	16 38·6	233 41	31 13	0·4652
April 5	17 12·6	16 55	0·3794	16 16·0	234 56	31 31	0·4672
11	17 12·7	18 18	0·3727	15 52·5	236 11	31 48	0·4692
17	17 12·0	19 39	0·3668	15 28·1	237 27	32 4	0·4711
23	17 10·4	20 57	0·3618	15 2·8	238 42	32 19	0·4731
29	17 8·0	22 9	0·3579	14 36·7	239 56	32 34	0·4750
May 5	17 4·8	23 14	0·3551	14 9·8	241 10	32 48	0·4769
11	17 0·8	24 11	0·3536	13 42·2	242 25	33 1	0·4787
17	16 56·3	24 58	0·3534	13 14·1	243 39	33 13	0·4805
23	16 51·5	25 34	0·3545	12 45·7	244 52	33 24	0·4823
29	16 46·4	25 58	0·3569	12 17·0	246 5	33 34	0·4841
June 4	16 41·2	26 11	0·3606	11 48·3	247 18	33 44	0·4858
10	16 36·1	26 12	0·3655	11 19·7	248 30	33 53	0·4875
16	16 31·4	26 0	0·3716	10 51·4	249 43	34 1	0·4892
22	16 27·1	25 38	0·3787	10 23·6	250 55	34 8	0·4908
28	16 23·3	25 7	0·3866	9 56·3	252 7	34 15	0·4924
July 4	16 20·2	24 27	0·3953	9 29·7	253 18	34 21	0·4940
10	16 17·9	23 39	0·4047	9 3·8	254 29	34 26	0·4956
16	16 16·3	22 45	0·4146	8 38·6	255 39	34 30	0·4971
22	16 15·4	21 47	0·4250	8 14·2	256 50	34 34	0·4986
28	16 15·3	20 45	0·4356	7 50·6	258 0	34 37	0·5000
Aug. 3	16 16·0	19 40	0·4463	7 27·7	259 9	34 39	0·5014
9	16 17·4	18 33	0·4572	7 5·5	260 18	34 41	0·5028
15	16 19·4	17 26	0·4681	6 44·0	261 27	34 42	0·5042
21	16 22·1	16 19	0·4789	6 23·1	262 35	34 42	0·5055
27	16 25·3	15 12	0·4896	6 2·8	263 43	34 42	0·5068

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Month and Day.	Geocentric. Right Ascension. Noon.	Declination. Noon.	Log. of Dist. from the Earth. Noon.	Meridian Passage.	Heliocentric. Longitude. Noon.	Latitude. Noon.	Log. of Rad. Vect. Noon.
	h m	° ′		h m	° ′	° ′	
Sept. 2	16 29·1	N.14 6	0·5001	5 43·0	264 50	N.34 41	0·5081
8	16 33·5	13 2	0·5103	5 23·8	265 57	34 40	0·5094
14	16 38·4	12 0	0·5203	5 5·0	267 3	34 38	0·5106
20	16 43·6	11 0	0·5299	4 46·6	268 10	34 35	0·5118
26	16 49·3	10 3	0·5392	4 28·6	269 15	34 32	0·5129
Oct. 2	16 55·3	9 9	0·5481	4 11·1	270 20	34 28	0·5140
8	17 1·7	8 17	0·5566	3 53·9	271 25	34 24	0·5151
14	17 8·3	7 29	0·5647	3 37·0	272 30	34 19	0·5162
20	17 15·3	6 44	0·5724	3 20·3	273 34	34 13	0·5173
26	17 22·5	6 2	0·5796	3 3·9	274 37	34 7	0·5183
Nov. 1	17 30·0	5 24	0·5863	2 47·7	275 40	34 1	0·5193
7	17 37·6	4 50	0·5926	2 31·7	276 43	33 54	0·5202
13	17 45·4	4 19	0·5983	2 15·8	277 45	33 46	0·5211
19	17 53·3	3 53	0·6036	2 0·2	278 46	33 38	0·5220
25	18 1·4	3 30	0·6084	1 44·6	279 47	33 30	0·5229
Dec. 1	18 9·6	3 10	0·6127	1 29·2	280 48	33 21	0·5237
7	18 17·9	2 55	0·6164	1 13·8	281 49	33 12	0·5245
13	18 26·2	2 44	0·6196	0 58·5	282 49	33 2	0·5253
19	18 34·6	2 36	0·6223	0 43·2	283 48	32 52	0·5261
25	18 42·9	2 32	0·6245	0 28·0	284 47	32 41	0·5268
31	18 51·2	2 31	0·6261	0 12·7	285 46	32 30	0·5275
37	18 59·5	N. 2 34	0·6271	23 54·9	286 44	N.32 18	0·5281

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R. A. in 1 Hour of Long.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Hor. Par.
	h m s	h m s	— s	*North.* ° ′ ″	*North.* ° ′ ″	+ ″	″
Apr. 17	17 11 50·30	17 11 36·87	0·53	19 47 55·8	20 1 0·0	32·8	3·7
19	17 11 22·00	17 11 5·71	0·65	20 13 57·4	20 26 47·6	32·2	3·7
21	17 10 47·99	17 10 28·85	0·77	20 39 30·1	20 52 4·5	31·6	3·7
23	17 10 8·33	17 9 46·43	0·88	21 4 30·3	21 16 47·1	30·9	3·7
25	17 9 23·16	17 8 58·55	1·00	21 28 54·6	21 40 52·2	30·1	3·8
27	17 8 32·61	17 8 5·35	1·11	21 52 39·6	22 4 16·3	29·2	3·8
29	17 7 36·80	17 7 6·98	1·22	22 15 41·8	22 26 55·9	28·3	3·8
May 1	17 6 35·90	17 6 3·60	1·32	22 37 58·0	22 48 47·7	27·3	3·8
3	17 5 30·09	17 4 55·40	1·42	22 59 24·6	23 9 48·2	26·2	3·8
5	17 4 19·55	17 3 42·58	1·52	23 19 58·1	23 29 53·9	25·1	3·8
7	17 3 4·51	17 2 25·38	1·61	23 39 35·1	23 49 1·3	23·9	3·8
9	17 1 45·23	17 1 4·09	1·69	23 58 12·2	24 7 7·3	22·6	3·8
11	17 0 22·00	16 59 38·99	1·77	24 15 46·2	24 24 8·6	21·3	3·8
13	16 58 55·11	16 58 10·40	1·84	24 32 14·1	24 40 2·4	19·9	3·8
15	16 57 24·92	16 56 38·69	1·91	24 47 33·2	24 54 46·2	18·4	3·8
17	16 55 51·77	16 55 4·22	1·97	25 1 41·1	25 8 17·6	16·9	3·8
19	16 54 16·06	16 53 27·36	2·02	25 14 35·5	25 20 34·7	15·4	3·8
21	16 52 38·15	16 51 48·50	2·06	25 26 15·1	25 31 36·3	13·8	3·8
23	16 50 58·43	16 50 8·01	2·09	25 36 38·3	25 41 21·0	12·2	3·8
25	16 49 17·29	16 48 26·30	2·12	25 45 44·3	25 49 47·9	10·6	3·8
♂ 27	16 47 35·09	16 46 43·72	2·14	25 53 31·8	25 56 55·9	9·0	3·8
29	16 45 52·23	16 45 0·67	2·15	26 0 0·2	26 2 44·7	7·3	3·8
31	16 44 9·09	16 43 17·53	2·15	26 5 9·2	26 7 13·7	5·6	3·8
June 2	16 42 26·05	16 41 34·69	2·14	26 8 58·2	26 10 22·7	3·9	3·8
4	16 40 43·50	16 39 52·53	2·13	26 11 27·2	26 12 12·0	2·3	3·7
6	16 39 1·84	16 38 11·46	2·11	26 12 37·0	26 12 42·3	0·7	3·7
8	16 37 21·45	16 36 31·86	2·08	26 12 28·0	26 11 54·2	— 0·9	3·7
10	16 35 42·73	16 34 54·11	2·04	26 11 1·0	26 9 48·5	2·6	3·7
12	16 34 6·04	16 33 18·57	1·99	26 8 17·1	26 6 26·8	4·2	3·6
14	16 32 31·75	16 31 45·60	1·94	26 4 17·9	26 1 50·7	5·8	3·6
16	16 31 0·19	16 30 15·54	1·88	25 59 5·4	25 56 2·2	7·3	3·6
18	16 29 31·68	16 28 48·66	1·81	25 52 41·5	25 49 3·5	8·7	3·6
20	16 28 6·49	16 27 25·22	1·74	25 45 8·6	25 40 57·1	10·1	3·6
22	16 26 44·88	16 26 5·50	1·66	25 36 29·2	25 31 45·4	11·5	3·6
24	16 25 27·09	16 24 49·67	1·58	25 26 45·9	25 21 31·1	12·8	3·5
26	16 24 13·28	16 23 37·95	1·50	25 16 1·1	25 10 16·5	14·1	3·5
28	16 23 3·69	16 22 30·51	1·41	25 4 17·5	24 58 4·5	15·3	3·5
30	16 21 58·43	16 21 27·48	1·32	24 51 37·8	24 44 57·7	16·4	3·5
July 2	16 20 57·67	16 20 29·02	1·22	24 38 4·4	24 30 58·4	17·5	3·5
4	16 20 1·55	16 19 35·28	1·12	24 23 40·0	24 16 9·4	18·5	3·4
6	16 19 10·21	16 18 46·36	1·02	24 8 27·1	24 0 33·4	19·5	3·4
8	16 18 23·74	16 18 2·36	0·91	23 52 28·6	23 44 13·1	20·4	3·4

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R. A. in 1 Hour of Long.	*Apparent* Declination	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Hor. Par.
	h m s	h m s	— s	*North.* ° ′ ″	*North.* ° ′ ″	— ″	″
July 10	16 17 42·24	16 17 23·38	0·81	23 35 47·3	23 27 11·4	21·3	3·4
12	16 17 5·78	16 16 49·45	0·70	23 18 25·9	23 9 31·2	22·1	3·4
14	16 16 34·40	16 16 20·63	0·60	23 0 27·5	22 51 15·4	22·8	3·3
16	16 16 8·14	16 15 56·93	0·49	22 41 55·0	22 32 26·9	23·5	3·3
18	16 15 47·00	16 15 38·34	0·39	22 22 51·3	22 13 8·6	24·1	3·3
20	16 15 30·96	16 15 24·85	0·28	22 3 19·0	21 53 23·0	24·7	3·3
22	16 15 20·01	16 15 16·43	0·18	21 43 20·8	21 33 12·8	25·2	3·2
24	16 15 14·10	16 15 13·02	0·08	21 22 59·2	21 12 40·4	25·7	3·2
			+				
26	16 15 13·18	16 15 14·57	0·02	21 2 16·5	20 51 47·9	26·1	3·2
28	16 15 17·19	16 15 21·03	0·13	20 41 14·8	20 30 37·6	26·5	3·2
30	16 15 26·08	16 15 32·34	0·23	20 19 56·4	20 9 11·6	26·8	3·1
Aug. 1	16 15 39·80	16 15 48·45	0·33	19 58 23·2	19 47 31·7	27·1	3·1
3	16 15 58·28	16 16 9·30	0·43	19 36 37·2	19 25 40·0	27·3	3·1
5	16 16 21·49	16 16 34·85	0·53	19 14 40·3	19 3 38·3	27·5	3·0
7	16 16 49·36	16 17 5·01	0·63	18 52 34·3	18 41 28·4	27·7	3·0
9	16 17 21·81	16 17 39·73	0·72	18 30 21·1	18 19 12·4	27·8	3·0
11	16 17 58·77	16 18 18·92	0·82	18 8 2·6	17 56 51·9	27·9	2·9
13	16 18 40·16	16 19 2·48	0·91	17 45 40·6	17 34 28·8	28·0	2·9
15	16 19 25·88	16 19 50·34	1·00	17 23 16·9	17 12 4·9	28·0	2·9
17	16 20 15·84	16 20 42·37	1·09	17 0 53·1	16 49 41·7	28·0	2·8
19	16 21 9·93	16 21 38·49	1·17	16 38 30·8	16 27 20·6	27·9	2·8
21	16 22 8·06	16 22 38·60	1·25	16 16 11·2	16 5 2·9	27·9	2·8
23	16 23 10·10	16 23 42·57	1·33	15 53 55·7	15 42 49·8	27·8	2·8
25	16 24 15·99	16 24 50·33	1·41	15 31 45·3	15 20 42·4	27·7	2·8
27	16 25 25·60	16 26 1·78	1·49	15 9 41·1	14 58 41·6	27·5	2·8
29	16 26 38·87	16 27 16·85	1·57	14 47 44·0	14 36 48·4	27·4	2·7
31	16 27 55·71	16 28 35·45	1·64	14 25 55·0	14 15 3·9	27·2	2·7
Sept. 2	16 29 16·06	16 29 57·52	1·71	14 4 15·2	13 53 29·1	27·0	2·7
4	16 30 39·84	16 31 22·98	1·78	13 42 45·5	13 32 4·7	26·8	2·6
6	16 32 6·95	16 32 51·74	1·85	13 21 26·7	13 10 51·7	26·6	2·6

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MEAN TIME.

Month and Day.	Geocentric. Right Ascension. Noon.	Declination. Noon.	Log. of Dist. from the Earth. Noon.	Meridian Passage.	Heliocentric. Longitude. Noon.	Latitude. Noon.	Log. of Rad. Vect. Noon.
1857.	h m	° ′		h m	° ′	° ′	
Dec. 30	9 11·0	N. 0 17	0·1657	14 32·8	123 20	S. 9 44	0·3580
1858.							
Jan. 5	9 8·0	0 33	0·1567	14 6·2	125 7	9 27	0·3610
11	9 4·2	0 57	0·1497	13 38·8	126 53	9 10	0·3639
17	8 59·7	1 31	0·1451	13 10·6	128 37	8 53	0·3669
23	8 54·7	2 15	0·1433	12 42·0	130 19	8 36	0·3699
29	8 49·4	3 6	0·1444	12 13·1	132 0	8 18	0·3730
Feb. 4	8 44·1	4 2	0·1485	11 44·3	133 39	8 0	0·3760
10	8 39·2	5 3	0·1556	11 15·9	135 17	7 42	0·3790
16	8 34·8	6 3	0·1653	10 48·0	136 53	7 24	0·3819
22	8 31·2	7 3	0·1776	10 20·9	138 28	7 6	0·3849
28	8 28·4	8 3	0·1920	9 54·6	140 2	6 48	0·3879
March 6	8 26·6	8 58	0·2080	9 29·4	141 34	6 30	0·3909
12	8 25·9	9 49	0·2252	9 5·1	143 4	6 12	0·3938
18	8 26·2	10 34	0·2433	8 41·8	144 34	5 53	0·3967
24	8 27·5	11 14	0·2620	8 19·5	146 2	5 35	0·3996
30	8 29·7	11 48	0·2809	7 58·1	147 29	5 17	0·4025
April 5	8 32·7	12 17	0·2999	7 37·6	148 54	4 59	0·4054
11	8 36·5	12 40	0·3186	7 17·9	150 19	4 41	0·4082
17	8 41·0	12 57	0·3371	6 58·8	151 42	4 23	0·4110
23	8 46·1	13 9	0·3551	6 40·3	153 4	4 5	0·4138
29	8 51·8	13 16	0·3726	6 22·4	154 25	3 47	0·4166
May 5	8 58·0	13 17	0·3895	6 5·0	155 45	3 29	0·4193
11	9 4·6	13 16	0·4058	5 48·0	157 4	3 12	0·4220
17	9 11·5	13 10	0·4214	5 31·3	158 22	2 54	0·4247
23	9 18·8	13 0	0·4364	5 15·0	159 39	2 37	0·4273
29	9 26·4	12 46	0·4507	4 58·9	160 55	2 19	0·4299
June 4	9 34·1	12 28	0·4644	4 43·1	162 10	2 2	0·4325
10	9 42·1	12 7	0·4773	4 27·4	163 24	1 45	0·4350
16	9 50·2	11 43	0·4896	4 11·9	164 38	1 28	0·4375
22	9 58·4	11 16	0·5012	3 56·5	165 50	1 11	0·4400
28	10 6·8	10 48	0·5122	3 41·2	167 2	0 55	0·4424
July 4	10 15·2	10 16	0·5225	3 26·0	168 13	0 39	0·4448
10	10 23·7	9 42	0·5321	3 10·9	169 23	0 23	0·4472
16	10 32·3	9 7	0·5411	2 55·8	170 32	S. 0 7	0·4495
22	10 40·9	8 29	0·5494	2 40·8	171 40	N. 0 9	0·4518
28	10 49·6	7 50	0·5571	2 25·8	172 48	0 25	0·4541
Aug. 3	10 58·2	7 10	0·5642	2 10·9	173 55	0 41	0·4563
9	11 6·9	6 28	0·5707	1 56·0	175 2	0 56	0·4585
15	11 15·6	5 46	0·5765	1 41·0	176 7	1 11	0·4606
21	11 24·3	5 3	0·5817	1 26·0	177 13	1 26	0·4627
27	11 32·9	4 19	0·5864	1 11·1	178 17	1 41	0·4648
Sept. 2	11 41·6	N. 3 35	0·5904	0 56·1	179 21	N. 1 56	0·4668

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MEAN TIME.

Month and Day.	Geocentric. Right Ascension. Noon.	Geocentric. Declination. Noon.	Geocentric. Log. of Dist. from the Earth. Noon.	Geocentric. Meridian Passage.	Heliocentric. Longitude. Noon.	Heliocentric. Latitude. Noon.	Heliocentric. Log. of Rad. Vect. Noon.
	h m	° ′		h m	° ′	° ′	
Sept. 2	11 41·6	N. 3 35	0·5904	0 56·1	179 21	N. 1 56	0·4668
8	11 50·2	2 50	0·5938	0 41·1	180 24	2 10	0·4688
14	11 58·8	2 6	0·5966	0 26·1	181 27	2 25	0·4708
20	12 7·4	1 21	0·5987	0 11·1	182 30	2 39	0·4727
26	12 16·0	N. 0 37	0·6003	24 23 53·5	183 31	2 53	0·4746
Oct. 2	12 24·5	S. 0 7	0·6012	23 38·3	184 33	3 7	0·4765
8	12 33·0	0 50	0·6016	23 23·1	185 33	3 21	0·4783
14	12 41·4	1 32	0·6013	23 7·9	186 34	3 34	0·4801
20	12 49·7	2 13	0·6003	22 52·6	187 34	3 47	0·4818
26	12 58·0	2 53	0·5988	22 37·3	188 33	4 0	0·4835
Nov. 1	13 6·2	3 31	0·5966	22 21·8	189 32	4 13	0·4852
7	13 14·3	4 8	0·5937	22 6·3	190 31	4 26	0·4868
13	13 22·3	4 43	0·5902	21 50·7	191 29	4 39	0·4884
19	13 30·2	5 16	0·5861	21 34·9	192 26	4 51	0·4900
25	13 37·9	5 47	0·5813	21 19·0	193 24	5 3	0·4915
Dec. 1	13 45·4	6 16	0·5759	21 2·9	194 21	5 15	0·4930
7	13 52·8	6 42	0·5698	20 46·6	195 18	5 27	0·4945
13	14 0·0	7 6	0·5631	20 30·1	196 14	5 39	0·4959
19	14 6·9	7 26	0·5558	20 13·4	197 10	5 50	0·4973
25	14 13·6	7 44	0·5478	19 56·4	198 6	6 2	0·4986
31	14 20·0	7 58	0·5392	19 39·1	199 1	6 13	0·4999
37	14 26·0	S. 8 9	0·5300	19 21·4	199 56	N. 6 24	0·5012

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Hor. Par.
	h m s	h m s	− s	*North.* ° ′ ″	*North.* ° ′ ″	+ ″	″
Jan. 1	9 9 31·91	9 9 2·37	1·20	0 23 12·1	0 25 42·9	5·9	5·9
3	9 8 31·25	9 7 58·60	1·33	0 28 30·0	0 31 33·4	7·3	5·9
5	9 7 24·45	9 6 48·83	1·45	0 34 53·3	0 38 29·6	8·7	6·0
7	9 6 11·78	9 5 33·37	1·57	0 42 22·3	0 46 31·3	10·0	6·0
9	9 4 53·62	9 4 12·60	1·68	0 50 56·5	0 55 38·0	11·3	6·0
11	9 3 30·35	9 2 46·92	1·79	1 0 35·6	1 5 49·2	12·7	6·1
13	9 2 2·38	9 1 16·80	1·88	1 11 18·4	1 17 3·3	14·0	6·1
15	9 0 30·24	8 59 42·75	1·96	1 23 3·4	1 29 18·7	15·3	6·1
17	8 58 54·42	8 58 5·31	2·03	1 35 48·7	1 42 33·2	16·6	6·1
19	8 57 15·51	8 56 25·06	2·09	1 49 31·8	1 56 44·1	17·7	6·2
21	8 55 34·06	8 54 42·57	2·14	2 4 9·7	2 11 48·2	18·8	6·2
23	8 53 50·67	8 52 58·44	2·17	2 19 39·3	2 27 42·2	19·9	6·2
25	8 52 5·96	8 51 13·28	2·19	2 35 56·7	2 44 22·3	20·8	6·2
27	8 50 20·49	8 49 27·67	2·20	2 52 58·5	3 1 44·7	21·7	6·2
29	8 48 34·88	8 47 42·19	2·20	3 10 40·5	3 19 45·4	22·5	6·1
31	8 46 49·69	8 45 57·44	2·18	3 28 58·7	3 38 20·1	23·2	6·1
Feb. 2	8 45 5·51	8 44 13·99	2·16	3 47 48·8	3 57 24·5	23·8	6·1
♂ 4	8 43 22·93	8 42 32·41	2·12	4 7 6·6	4 16 54·4	24·4	6·1
6	8 41 42·50	8 40 53·27	2·07	4 26 47·4	4 36 45·1	24·8	6·1
8	8 40 4·79	8 39 17·13	2·00	4 46 46·8	4 56 52·0	25·1	6·0
10	8 38 30·34	8 37 44·51	1·93	5 7 0·1	5 17 10·4	25·4	6·0
12	8 36 59·69	8 36 15·93	1·85	5 27 22·4	5 37 35·6	25·5	5·9
14	8 35 33·30	8 34 51·85	1·75	5 47 49·4	5 58 3·2	25·6	5·9
16	8 34 11·64	8 33 32·71	1·65	6 8 16·4	6 18 28·4	25·5	5·9
18	8 32 55·12	8 32 18·89	1·54	6 28 38·9	6 38 47·2	25·4	5·8
20	8 31 44·07	8 31 10·70	1·42	6 48 53·0	6 58 55·7	25·2	5·8
22	8 30 38·81	8 30 8·43	1·30	7 8 55·0	7 18 50·3	24·9	5·7
24	8 29 39·57	8 29 12·27	1·17	7 28 41·2	7 38 27·5	24·5	5·6
26	8 28 46·55	8 28 22·43	1·04	7 48 8·8	7 57 44·6	24·1	5·6
28	8 27 59·93	8 27 39·04	0·90	8 7 14·8	8 16 38·9	23·6	5·5
Mar. 2	8 27 19·80	8 27 2·21	0·77	8 25 56·7	8 35 7·9	23·1	5·4
4	8 26 46·29	8 26 32·04	0·63	8 44 12·3	8 53 9·5	22·5	5·4
6	8 26 19·47	8 26 8·57	0·49	9 1 59·4	9 10 41·8	21·9	5·3
8	8 25 59·36	8 25 51·85	0·35	9 19 16·5	9 27 43·2	21·3	5·3
10	8 25 46·03	8 25 41·90	0·21	9 36 1·8	9 44 12·0	20·6	5·2
12	8 25 39·46	8 25 38·71	0·07	9 52 13·7	10 0 6·7	19·9	5·1
14	8 25 39·64	8 25 42·25	+ 0·07	10 7 51·0	10 15 26·3	19·2	5·0
16	8 25 46·53	8 25 52·47	0·21	10 22 52·6	10 30 9·7	18·4	5·0
18	8 26 0·06	8 26 9·29	0·35	10 37 17·6	10 44 16·1	17·6	4·9
20	8 26 20·13	8 26 32·58	0·49	10 51 5·2	10 57 44·8	16·8	4·8
22	8 26 46·62	8 27 2·22	0·62	11 4 14·9	11 10 35·6	16·1	4·8
24	8 27 19·37	8 27 38·01	0·75	11 16 46·6	11 22 48·1	15·3	4·7

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Hor. Par.
	h m s	h m s	+ s	*North.* ° ′ ″	*North.* ° ′ ″	+ ″	″
Mar. 26	8 27 58·17	8 28 19·83	0·87	11 28 40·0	11 34 22·4	14·5	4·6
28	8 28 42·96	8 29 7·56	0·99	11 39 55·3	11 45 18·6	13·7	4·6
30	8 29 33·58	8 30 0·99	1·11	11 50 32·4	11 55 36·7	12·9	4·5
Apr. 1	8 30 29·76	8 30 59·90	1·23	12 0 31·7	12 5 17·1	12·1	4·4
3	8 31 31·38	8 32 4·18	1·34	12 9 53·3	12 14 20·0	11·3	4·4
5	8 32 38·28	8 33 13·65	1·45	12 18 37·5	12 22 45·6	10·5	4·3
7	8 33 50·29	8 34 28·17	1·55	12 26 44·5	12 30 34·2	9·8	4·2
9	8 35 7·27	8 35 47·58	1·65	12 34 14·7	12 37 45·9	9·0	4·2
11	8 36 29·06	8 37 11·72	1·75	12 41 8·1	12 44 21·2	8·2	4·1
13	8 37 55·52	8 38 40·44	1·85	12 47 25·3	12 50 20·3	7·5	4·1
15	8 39 26·46	8 40 13·57	1·94	12 53 6·5	12 55 43·8	6·7	4·0
17	8 41 1·73	8 41 50·93	2·03	12 58 12·2	13 0 31·9	6·0	3·9
19	8 42 41·14	8 43 32·34	2·11	13 2 43·0	13 4 45·4	5·3	3·9
21	8 44 24·51	8 45 17·63	2·19	13 6 39·3	13 8 24·8	4·6	3·8
23	8 46 11·67	8 47 6·61	2·27	13 10 1·9	13 11 30·8	3·9	3·8
25	8 48 2·44	8 48 59·12	2·34	13 12 51·5	13 14 4·0	3·2	3·7
27	8 49 56·65	8 50 55·01	2·41	13 15 8·5	13 16 5·0	2·5	3·7
29	8 51 54·16	8 52 54·11	2·48	13 16 53·7	13 17 34·4	1·9	3·6
May 1	8 53 54·83	8 54 56·30	2·55	13 18 7·5	13 18 32·8	1·2	3·6
3	8 55 58·51	8 57 1·45	2·60	13 18 50·6	13 19 0·8	0·6	3·5
5	8 58 5·09	8 59 9·44	2·67	13 19 3·5	13 18 58·8	0·0	3·5
7	9 0 14·46	9 1 20·15	2·72	13 18 46·7	13 18 27·4	— 0·7	3·5
9	9 2 26·49	9 3 33·46	2·78	13 18 0·7	13 17 27·0	1·3	3·4
11	9 4 41·06	9 5 49·26	2·83	13 16 46·0	13 15 58·0	1·9	3·4
13	9 6 58·06	9 8 7·43	2·88	13 15 3·0	13 14 1·0	2·4	3·4
15	9 9 17·37	9 10 27·84	2·93	13 12 52·3	13 11 36·7	3·0	3·3

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MEAN TIME.

Month and Day.	Geocentric. Right Ascension. Noon.	Geocentric. Declination. Noon.	Geocentric. Log. of Dist. from the Earth. Noon.	Geocentric. Meridian Passage.	Heliocentric. Longitude. Noon.	Heliocentric. Latitude. Noon.	Heliocentric. Log. of Rad. Vect. Noon.
1857.	h m	° ′		h m	° ′	° ′	
Dec. 30	13 33·8	S. 2 30	0·3626	18 56·3	177 42	N.6 52	0·3582
1858.							
Jan. 5	13 42·4	3 3	0·3476	18 41·3	179 27	6 56	0·3571
11	13 50·7	3 31	0·3321	18 25·9	181 13	6 59	0·3560
17	13 58·5	3 55	0·3159	18 10·0	183 0	7 1	0·3549
23	14 5·9	4 15	0·2991	17 53·7	184 47	7 3	0·3538
29	14 12·7	4 30	0·2817	17 36·9	186 34	7 5	0·3527
Feb. 4	14 18·9	4 40	0·2639	17 19·5	188 22	7 7	0·3517
10	14 24·5	4 46	0·2457	17 1·4	190 11	7 8	0·3507
16	14 29·4	4 45	0·2272	16 42·5	192 0	7 8	0·3497
22	14 33·4	4 39	0·2085	16 22·7	193 50	7 8	0·3487
28	14 36·4	4 29	0·1899	16 2·0	195 40	7 8	0·3477
March 6	14 38·4	4 13	0·1716	15 40·2	197 30	7 7	0·3467
12	14 39·3	3 53	0·1538	15 17·4	199 21	7 6	0·3458
18	14 39·1	3 28	0·1370	14 53·4	201 13	7 4	0·3449
24	14 37·7	3 0	0·1214	14 28·4	203 5	7 2	0·3440
30	14 35·2	2 29	0·1075	14 2·2	204 57	7 0	0·3431
April 5	14 31·7	1 57	0·0957	13 35·1	206 50	6 57	0·3422
11	14 27·3	1 26	0·0865	13 7·0	208 43	6 53	0·3414
17	14 22·2	0 57	0·0802	12 38·3	210 37	6 49	0·3406
23	14 16·7	0 31	0·0770	12 9·2	212 31	6 45	0·3398
29	14 11·0	S. 0 11	0·0769	11 39·9	214 26	6 40	0·3391
May 5	14 5·5	N. 0 2	0·0800	11 10·9	216 21	6 35	0·3384
11	14 0·4	0 7	0·0861	10 42·3	218 16	6 29	0·3378
17	13 56·0	N. 0 4	0·0947	10 14·4	220 11	6 23	0·3372
23	13 52·4	S. 0 7	0·1057	9 47·4	222 7	6 16	0·3366
29	13 49·8	0 26	0·1185	9 21·3	224 3	6 9	0·3360
June 4	13 48·3	0 52	0·1327	8 56·3	225 59	6 1	0·3355
10	13 47·9	1 25	0·1479	8 32·4	227 55	5 53	0·3350
16	13 48·6	2 4	0·1638	8 9·5	229 52	5 45	0·3345
22	13 50·3	2 49	0·1802	7 47·6	231 48	5 36	0·3341
28	13 53·0	3 37	0·1967	7 26·7	233 45	5 27	0·3337
July 4	13 56·6	4 29	0·2133	7 6·8	235 42	5 17	0·3334
10	14 1·0	5 24	0·2297	6 47·7	237 39	5 7	0·3331
16	14 6·2	6 22	0·2458	6 29·4	239 36	4 57	0·3328
22	14 12·2	7 21	0·2615	6 11·8	241 34	4 46	0·3326
28	14 18·9	8 22	0·2769	5 54·8	243 31	4 35	0·3324
Aug. 3	14 26·1	9 23	0·2918	5 38·4	245 28	4 24	0·3323
9	14 33·9	10 25	0·3063	5 22·6	247 25	4 12	0·3322
15	14 42·3	11 27	0·3202	5 7·4	249 23	4 0	0·3321
21	14 51·2	12 28	0·3335	4 52·7	251 20	3 48	0·3321
27	15 0·5	13 28	0·3463	4 38·4	253 18	3 36	0·3322
Sept. 2	15 10·3	S. 14 28	0·3587	4 24·5	255 15	N.3 23	0·3323

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MEAN TIME.

Month and Day.	Geocentric. Right Ascension. Noon.	Declination. Noon.	Log. of Dist. from the Earth. Noon.	Meridian Passage.	Heliocentric. Longitude. Noon.	Latitude. Noon.	Log. of Rad. Vect. Noon.
	h m	° ′		h m	° ′	° ′	
Sept. 2	15 10·3	S. 14 28	0·3587	4 24·5	255 15	N. 3 23	0·3323
8	15 20·5	15 25	0·3705	4 11·1	257 12	3 10	0·3324
14	15 31·1	16 21	0·3818	3 58·1	259 9	2 57	0·3325
20	15 42·1	17 15	0·3925	3 45·5	261 6	2 43	0·3327
26	15 53·4	18 6	0·4028	3 33·1	263 3	2 30	0·3329
Oct. 2	16 5·0	18 55	0·4125	3 21·1	264 59	2 16	0·3332
8	16 16·9	19 41	0·4217	3 9·4	266 55	2 2	0·3335
14	16 29·2	20 22	0·4304	2 58·1	268 51	1 48	0·3339
20	16 41·8	21 0	0·4386	2 47·0	270 47	1 34	0·3343
26	16 54·5	21 34	0·4464	2 36·1	272 42	1 20	0·3348
Nov. 1	17 7·5	22 5	0·4536	2 25·4	274 37	1 5	0·3353
7	17 20·6	22 31	0·4604	2 14·9	276 32	0 51	0·3358
13	17 34·0	22 52	0·4667	2 4·6	278 27	0 37	0·3363
19	17 47·5	23 9	0·4725	1 54·5	280 21	0 23	0·3369
25	18 1·2	23 21	0·4778	1 44·5	282 15	N. 0 8	0·3375
Dec. 1	18 14·9	23 29	0·4827	1 34·6	284 9	S. 0 6	0·3382
7	18 28·7	23 32	0·4870	1 24·7	286 3	0 20	0·3389
13	18 42·5	23 30	0·4909	1 14·9	287 56	0 34	0·3396
19	18 56·3	23 23	0·4943	1 5·0	289 49	0 48	0·3403
25	19 10·1	23 13	0·4973	0 55·2	291 41	1 2	0·3411
31	19 23·9	22 57	0·4998	0 45·3	293 33	1 16	0·3419
37	19 37·6	S. 22 37	0·5018	0 35·4	295 24	S. 1 30	0·3428

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Hor. Par.
	h m s	h m s	+ s	South. ° ′ ″	South. ° ′ ″	+ ″	″
Mar. 6	14 38 25·70	14 38 38·30	0·57	4 10 57·7	4 7 47·3	7·8	5·8
8	14 38 49·07	14 38 57·99	0·41	4 4 29·1	4 1 3·3	8·4	5·9
10	14 39 5·04	14 39 10·21	0·25	3 57 29·9	3 53 49·2	9·0	5·9
12	14 39 13·49	14 39 14·86	0·10	3 50 1·3	3 46 6·3	9·6	6·0
14	14 39 14·33	14 39 11·90	— 0·06	3 42 4·4	3 37 56·0	10·2	6·1
16	14 39 7·55	14 39 1·29	0·22	3 33 41·3	3 29 20·4	10·7	6·2
18	14 38 53·12	14 38 43·04	0·38	3 24 53·8	3 20 21·6	11·2	6·3
20	14 38 31·07	14 38 17·21	0·54	3 15 44·1	3 11 1·6	11·6	6·3
22	14 38 1·47	14 37 43·86	0·69	3 6 14·4	3 1 22·7	12·0	6·4
24	14 37 24·39	14 37 3·09	0·85	2 56 27·0	2 51 27·4	12·4	6·5
26	14 36 39·97	14 36 15·06	1·00	2 46 24·3	2 41 18·1	12·7	6·5
28	14 35 48·36	14 35 19·90	1·15	2 36 9·1	2 30 57·6	12·9	6·6
30	14 34 49·72	14 34 17·83	1·29	2 25 44·0	2 20 28·7	13·1	6·7
Apr. 1	14 33 44·27	14 33 9·08	1·43	2 15 12·2	2 9 54·7	13·2	6·8
3	14 32 32·28	14 31 53·92	1·57	2 4 36·7	1 59 18·6	13·2	6·8
5	14 31 14·04	14 30 32·67	1·69	1 54 0·9	1 48 43·9	13·2	6·9
7	14 29 49·88	14 29 5·72	1·81	1 43 28·2	1 38 14·3	13·1	6·9
9	14 28 20·25	14 27 33·52	1·92	1 33 2·6	1 27 53·7	12·9	7·0
11	14 26 45·59	14 25 56·54	2·02	1 22 48·0	1 17 46·2	12·6	7·0
13	14 25 6·45	14 24 15·37	2·10	1 12 48·7	1 7 56·0	12·3	7·0
15	14 23 23·38	14 22 30·56	2·18	1 3 8·6	0 58 27·0	11·8	7·1
17	14 21 36·99	14 20 42·75	2·25	0 53 51·8	0 49 23·5	11·3	7·1
19	14 19 47·92	14 18 52·58	2·30	0 45 2·4	0 40 49·0	10·7	7·1
21	14 17 56·81	14 17 0·69	2·33	0 36 43·8	0 32 47·2	10·0	7·2
♂ 23	14 16 4·31	14 15 7·75	2·35	0 28 59·5	0 25 21·2	9·3	7·2
25	14 14 11·09	14 13 14·41	2·36	0 21 52·7	0 18 34·2	8·5	7·2
27	14 12 17·78	14 11 21·28	2·36	0 15 26·1	0 12 28·7	7·6	7·1
29	14 10 24·99	14 9 29·00	2·34	0 9 42·4	0 7 7·4	6·7	7·1
May 1	14 8 33·38	14 7 38·20	2·31	0 4 44·1	0 2 32·6	5·7	7·1
3	14 6 43·53	14 5 49·46	2·27	0 0 33·3	North. 0 1 13·6	4·7	7·1
5	14 4 56·06	14 4 3·40	2·21	North. 0 2 47·9		3·7	7·1
7	14 3 11·56	14 2 20·60	2·14	0 5 17·8	0 4 9·4	2·6	7·1
9	14 1 30·60	14 0 41·62	2·06	0 6 54·8	0 6 13·0	1·5	7·1
11	13 59 53·74	13 59 7·03	1·97	0 7 37·7	0 7 23·1	0·3	7·1
13	13 58 21·53	13 57 37·30	1·87	0 7 25·6	0 7 38·6	— 0·8	7·0
15	13 56 54·40	13 56 12·87	1·76	0 6 18·3	0 6 58·8	1·9	7·0
17	13 55 32·77	13 54 54·16	1·64	0 4 15·6	0 5 23·9	3·1	6·9
19	13 54 17·06	13 53 41·50	1·52	0 1 17·6	0 2 53·5	4·3	6·9
					South. 0 0 31·9		

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AT TRANSIT OVER THE MERIDIAN OF GREENWICH.

Month and Day.	*Apparent* Right Ascension.	Right Ascen. on intermediate Day.	Var. of R.A. in 1 Hour of Long.	*Apparent* Declination.	Declination on intermediate Day.	Var. of Declin. in 1 Hour of Long.	Hor. Par.
	h m s	h m s	— s	*South.* ° ′ ″	*South.* ° ′ ″	— ″	″
May 21	13 53 7·52	13 52 35·16	1·39	0 2 34·8	0 4 51·2	5·4	6·8
23	13 52 4·44	13 51 35·38	1·25	0 7 20·9	0 10 3·7	6·5	6·7
25	13 51 8·01	13 50 42·35	1·11	0 12 59·5	0 16 8·1	7·6	6·6
27	13 50 18·41	13 49 56·21	0·97	0 19 29·3	0 23 2·9	8·6	6·5
29	13 49 35·76	13 49 17·06	0·82	0 26 48·8	0 30 46·7	9·6	6·5
31	13 49 0·12	13 48 44·95	0·67	0 34 56·5	0 39 18·1	10·6	6·4
June 2	13 48 31·58	13 48 19·99	0·52	0 43 51·2	0 48 35·8	11·6	6·4
4	13 48 10·20	13 48 2·19	0·37	0 53 31·6	0 58 38·5	12·6	6·3
6	13 47 55·99	13 47 51·59	0·22	1 3 56·2	1 9 24·6	13·5	6·2
8	13 47 48·99	13 47 48·19	0·07	1 15 3·5	1 20 52·6	14·4	6·2
			+				
10	13 47 49·20	13 47 51·99	0·08	1 26 51·8	1 33 0·9	15·2	6·1
12	13 47 56·56	13 48 2·90	0·23	1 39 19·6	1 45 47·7	16·0	6·0
14	13 48 11·02	13 48 20·89	0·38	1 52 25·0	1 59 11·3	16·8	6·0
16	13 48 32·49	13 48 45·82	0·52	2 6 6·2	2 13 9·7	17·5	5·9
18	13 49 0·86	13 49 17·59	0·66	2 20 21·4	2 27 41·1	18·2	5·8
20	13 49 36·00	13 49 56·07	0·80	2 35 8·6	2 42 43·7	18·8	5·8
22	13 50 17·78	13 50 41·10	0·94	2 50 26·1	2 58 15·6	19·4	5·7
24	13 51 6·03	13 51 32·53	1·07	3 6 12·0	3 14 15·0	20·0	5·6
26	13 52 0·60	13 52 30·20	1·20	3 22 24·6	3 30 40·6	20·5	5·6
28	13 53 1·33	13 53 33·96	1·33	3 39 2·6	3 47 30·5	21·0	5·5
30	13 54 8·08	13 54 43·68	1·45	3 56 4·2	4 4 43·4	21·5	5·4
July 2	13 55 20·73	13 55 59·22	1·57	4 13 28·1	4 22 18·1	22·0	5·4
4	13 56 39·14	13 57 20·47	1·69	4 31 13·2	4 40 13·2	22·4	5·3
6	13 58 3·19	13 58 47·29	1·81	4 49 18·0	4 58 27·5	22·8	5·2
8	13 59 32·75	14 0 19·56	1·92	5 7 41·4	5 16 59·6	23·2	5·2
10	14 1 7·70	14 1 57·16	2·03	5 26 22·0	5 35 48·3	23·5	5·1
12	14 2 47·92	14 3 39·96	2·14	5 45 18·4	5 54 52·2	23·8	5·0
14	14 4 33·26	14 5 27·80	2·25	6 4 29·5	6 14 10·1	24·1	5·0
16	14 6 23·58	14 7 20·56	2·35	6 23 53·8	6 33 40·4	24·4	4·9
18	14 8 18·74	14 9 18·09	2·45	6 43 29·8	6 53 21·9	24·6	4·8
20	14 10 18·60	14 11 20·24	2·55	7 3 16·5	7 13 13·5	24·8	4·8
22	14 12 23·00	14 13 26·86	2·64	7 23 12·6	7 33 13·8	25·0	4·7
24	14 14 31·81	14 15 37·83	2·73	7 43 16·9	7 53 21·7	25·2	4·6
26	14 16 44·92	14 17 53·04	2·82	8 3 28·2	8 13 36 2	25·3	4·6
28	14 19 2·20	14 20 12·38	2·90	8 23 45·7	8 33 56·4	25·4	4·5
30	14 21 23·56	14 22 35·75	2·99	8 44 8·3	8 54 21·3	25·5	4·4
Aug. 1	14 23 48·92	14 25 3·07	3·07	9 4 35·3	9 14 50·1	25·6	4·4
3	14 26 18·19	14 27 34·26	3·15	9 25 5·7	9 35 22·0	25·7	4·3
5	14 28 51·28	14 30 9·24	3·23	9 45 38·7	9 55 55·9	25·7	4·3
7	14 31 28·13	14 32 47·94	3·31	10 6 13·4	10 16 31·0	25·7	4·2

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MEAN TIME AT GREENWICH.

Month and Day.	Right Ascension. *Noon.*		Declination. *Noon.*		Log. of Distance from the Earth. *Noon.*		Log. of Distance from the Sun. *Noon.*		Meridian Passage.	
	h m	Δ₁ m	° ′	Δ₁ ′		Δ₁		Δ₁	h m	Δ₁ m
Jan. 1	1 2·4	+ 7·8	N. 0 26·4	+65·7	0·3606	+211	0·4070	−34	6 18·2	−31·5
11	1 10·2	9·6	1 32·1	74·4	·3817	198	·4036	35	5 46·7	29·8
21	1 19·8	11·0	2 46·5	80·9	·4015	182	·4001	35	5 16·9	28·3
31	1 30·8	12·4	4 7·4	85·7	·4197	165	·3966	36	4 48·6	27·0
Feb. 10	1 43·2	13·5	5 33·1	88·6	·4362	149	·3930	36	4 21·6	25·8
20	1 56·7	14·6	7 1·7	90·1	·4511	131	·3894	36	3 55·8	24·8
Mar. 2	2 11·3	15·6	8 31·8	90·0	·4642	116	·3858	36	3 31·0	23·8
12	2 26·9	16·4	10 1·8	88·6	·4758	98	·3822	36	3 7·2	22·9
22	2 43·3	17·2	11 30·4	85·8	·4856	83	·3786	36	2 44·3	22·2
Apr. 1	3 0·5	18·0	12 56·2	81·6	·4939	68	·3750	36	2 22·1	21·4
11	3 18·5	18·7	14 17·8	76·3	·5007	53	·3714	35	2 0·7	20·7
21	3 37·2	19·4	15 34·1	69·6	·5060	39	·3679	35	1 40·0	20·0
May 1	3 56·6	19·9	16 43·7	62·1	·5099	26	·3644	35	1 20·0	19·5
11	4 16·5	20·5	17 45·8	53·4	·5125	13	·3609	34	1 0·5	18·8
21	4 37·0	21·1	18 39·2	43·8	·5138	+ 1	·3575	33	0 41·7	18·4
31	4 58·1	21·4	19 23·0	33·3	·5139	− 11	·3542	32	0 23·3	18·0
June 10	5 19·5	21·8	19 56·3	22·3	·5128	23	·3510	32	0 5·3	19·4
20	5 41·3	22·●	20 18·6	+10·8	·5105	35	·3478	30	23 45·9	17·3
30	6 3·3	22·2	20 29·4	− 1·0	·5070	45	·3448	29	23 28·6	17·2
July 10	6 25·5	22·3	20 28·4	13·0	·5025	57	·3419	27	23 11·4	17·1
20	6 47·8	22·3	20 15·4	24·6	·4968	68	·3392	26	22 54·3	17·1
30	7 10·1	22·2	19 50·8	36·1	·4900	79	·3366	25	22 37·2	17·2
Aug. 9	7 32·3	22·0	19 14·7	46·8	·4821	90	·3341	22	22 20·0	17·5
19	7 54·3	21·7	18 27·9	56·7	·4731	102	·3319	21	22 2·5	17·8
29	8 16·0	21·3	17 31·2	65·7	·4629	114	·3298	18	21 44·7	18·0
Sept. 8	8 37·3	21·0	16 25·5	73·4	·4515	127	·3280	16	21 26·7	18·5
18	8 58·3	20·5	15 12·1	79·7	·4388	139	·3264	14	21 8·2	19·0
28	9 18·8	19·9	13 52·4	84·6	·4249	152	·3250	12	20 49·2	19·5
Oct. 8	9 38·7	19·3	12 27·8	87·6	·4097	167	·3238	9	20 29·7	20·1
18	9 58·0	18·7	11 0·2	88·9	·3930	181	·3229	6	20 9·6	20·8
28	10 16·7	17·9	9 31·3	88·3	·3749	196	·3223	4	19 48·8	21·5
Nov. 7	10 34·6	17·1	8 3·0	85·2	·3553	212	·3219	− 2	19 27·3	22·4
17	10 51·7	16·0	6 37·8	80·2	·3341	228	·3217	+ 1	19 4·9	23·4
27	11 7·7	15·0	5 17·6	72·6	·3113	243	·3218	4	18 41·5	24·6
Dec. 7	11 22·7	13·5	4 5·0	62·3	·2870	258	·3222	6	18 16·9	26·0
17	11 36·2	11·9	3 2·7	49·2	·2612	271	·3228	9	17 50·9	27·6
27	11 48·1	+ 10·0	2 13·5	−33·4	·2341	−281	·3237	+12	17 23·3	−29·5
37	11 58·1		N. 1 40·1		0·2060		0·3249		16 53·8	

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MEAN TIME AT GREENWICH.

Month and Day.	Right Ascension. Noon.		Declination. Noon.		Log. of Distance from the Earth. Noon.		Log. of Distance from the Sun. Noon.		Meridian Passage.	
	h m	Δ₁ m	° ′	Δ₁ ′		Δ₁		Δ₁	h m	Δ₂ m
Jan. 1	14 50·0	+12·2	S. 3 49·3	− 15·0	0·5136	−175	0·4631	− 6	20 4·4	−27·2
11	15 2·2	11·4	4 4·3	− 4·1	·4961	192	·4625	7	19 37·2	28·1
21	15 13·6	10·3	4 8·4	+ 7·1	·4769	208	·4618	8	19 9·1	29·1
31	15 23·9	9·1	4 1·3	19·4	·4561	222	·4610	9	18 40·0	30·4
Feb. 10	15 33·0	7·5	3 41·9	32·0	·4339	236	·4601	10	18 9·6	32·1
20	15 40·5	5·7	3 9·9	43·4	·4103	241	·4591	12	17 37·5	33·7
Mar. 2	15 46·2	3·7	2 26·5	54·5	·3862	244	·4579	12	17 3·8	35·8
12	15 49·9	+ 1·4	1 32·0	64·1	·3618	239	·4567	13	16 28·0	38·1
22	15 51·3	− 1·1	S. 0 27·9	70·9	·3379	222	·4554	15	15 49·9	40·6
Apr. 1	15 50·2	3·6	N. 0 43·0	73·8	·3157	196	·4539	16	15 9·3	43·0
11	15 46·6	5·9	1 56·8	71·3	·2961	157	·4523	16	14 26·3	45·3
21	15 40·7	7·8	3 8·1	62·6	·2804	106	·4507	18	13 41·0	47·1
May 1	15 32·9	8·9	4 10·7	47·6	·2698	− 47	·4489	19	12 53·9	48·3
11	15 24·0	9·2	4 58·3	27·9	·2651	+ 13	·4470	20	12 5·6	48·4
21	15 14·8	8·5	5 26·2	+ 4·5	·2664	72	·4450	20	11 17·2	47·7
31	15 6·3	7·1	5 30·7	− 17·8	·2736	119	·4430	23	10 29·5	46·3
June 10	14 59·2	5·0	5 12·9	38·3	·2855	157	·4407	23	9 43·2	44·2
20	14 54·2	2·6	4 34·6	55·7	·3012	183	·4384	24	8 59·0	41·9
30	14 51·6	− 0·3	3 38·9	69·1	·3195	197	·4360	25	8 17·1	39·5
July 10	14 51·3	+ 2·0	2 29·8	79·1	·3392	202	·4335	26	7 37·6	37·2
20	14 53·3	4·3	N. 1 10·7	85·9	·3594	201	·4309	28	7 0·4	35·1
30	14 57·6	6·2	S. 0 15·2	90·4	·3795	195	·4281	28	6 25·3	33·1
Aug. 9	15 3·8	7·9	1 45·6	92·4	·3990	185	·4253	29	5 52·2	31·3
19	15 11·7	9·6	3 18·0	92·8	·4175	173	·4224	31	5 20·9	29·8
29	15 21·3	11·0	4 50·8	91·7	·4348	159	·4193	31	4 51·1	28·3
Sept. 8	15 32·3	12·4	6 22·5	89·2	·4507	145	·4162	33	4 22·8	27·0
18	15 44·7	13·4	7 51·7	85·3	·4652	127	·4129	34	3 55·8	25·9
28	15 58·1	14·6	9 17·0	80·6	·4779	116	·4095	34	3 29·9	24·8
Oct. 8	16 12·7	15·6	10 37·6	74·6	·4895	98	·4061	36	3 5·1	23·8
18	16 28·3	16·5	11 52·2	67·8	·4993	82	·4025	36	2 41·3	22·9
28	16 44·8	17·2	13 0·0	59·9	·5075	67	·3989	37	2 18·4	22·1
Nov. 7	17 2·0	18·1	13 59·9	51·3	·5142	51	·3952	38	1 56·3	21·4
17	17 20·1	18·6	14 51·2	42·0	·5193	36	·3914	39	1 34·9	20·7
27	17 38·7	19·3	15 33·2	32·1	·5229	20	·3875	40	1 14·2	20·2
Dec. 7	17 58·0	19·7	16 5·3	21·6	·5249	+ 5	·3835	40	0 54·0	19·7
17	18 17·7	20·1	16 26·9	11·1	·5254	− 10	·3795	41	0 34·3	19·3
27	18 37·8	+20·4	16 38·0	− 0·3	·5244	− 26	·3754	−42	0 15·0	−20·8
37	18 58·2		S. 16 38·3		0·5218		0·3712		23 54·2	

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Month and Day.	Right Ascension. Noon.		Declination. Noon.		Log. of Distance from the Earth. Noon.		Log. of Distance from the Sun. Noon.		Meridian Passage.	
	h m	Δ_1 m	° ′	Δ_1 ′		Δ_1		Δ_1	h m	Δ_1 m
Jan. 1	17 17·4	+ 17·3	S. 23 34·5	− 6·1	0·5694	− 84	0·4489	− 22	22 32·0	− 22·2
11	17 34·7	17·0	23 40·6	+ 1·2	·5610	103	·4467	23	22 9·8	22·3
21	17 51·7	16·8	23 39·4	8·6	·5507	122	·4444	25	21 47·5	22·7
31	18 8·5	16·4	23 30·8	15·6	·5385	140	·4419	26	21 24·8	23·0
Feb. 10	18 24·9	16·0	23 15·2	22·3	·5245	160	·4393	27	21 1·8	23·5
20	18 40·9	15·2	22 52·9	28·2	·5085	179	·4366	28	20 38·3	24·2
Mar. 2	18 56·1	14·5	22 24·7	33·7	·4906	199	·4338	30	20 14·1	24·9
12	19 10·6	13·6	21 51·0	38·0	·4707	218	·4308	31	19 49·2	25·9
22	19 24·2	12·6	21 13·0	41·4	·4489	237	·4277	32	19 23·3	26·9
Apr. 1	19 36·8	11·2	20 31·6	43·7	·4252	255	·4245	34	18 56·4	28·2
11	19 48·0	9·8	19 47·9	44·7	·3997	274	·4211	34	18 28·2	29·7
21	19 57·8	8·2	19 3·2	44·0	·3723	288	·4177	36	17 58·5	31·4
May 1	20 6·0	6·1	18 19·2	42·1	·3435	301	·4141	38	17 27·1	33·3
11	20 12·1	3·9	17 37·1	38·2	·3134	309	·4103	38	16 53·8	35·6
21	20 16·0	+ 1·4	16 58·9	32·9	·2825	309	·4065	40	16 18·2	38·1
31	20 17·4	− 1·4	16 26·0	26·1	·2516	299	·4025	41	15 40·1	40·9
June 10	20 16·0	4·2	15 59·9	18·3	·2217	274	·3984	42	14 59·2	43·7
20	20 11·8	7·0	15 41·6	10·1	·1943	233	·3942	43	14 15·5	46·4
30	20 4·8	9·2	15 31·5	+ 2·6	·1710	175	·3899	45	13 29·1	48·6
July 10	19 55·6	10·5	15 28·9	− 3·5	·1535	102	·3854	45	12 40·5	49·7
20	19 45·1	10·5	15 32·4	7·6	·1433	− 22	·3809	47	11 50·8	49·8
30	19 34·6	9·4	15 40·0	9·8	·1411	+ 56	·3762	47	11 1·0	48·6
Aug. 9	19 25·2	7·0	15 49·8	10·2	·1467	123	·3715	49	10 12·4	46·1
19	19 18·2	4·0	16 0·0	9·2	·1590	172	·3666	49	9 26·3	43·2
29	19 14·2	− 0·7	16 9·2	7·0	·1762	206	·3617	50	8 43·1	39·9
Sept. 8	19 13·5	+ 2·7	16 16·2	− 3·4	·1968	223	·3567	51	8 3·2	36·6
18	19 16·2	5·7	16 19·6	+ 1·5	·2191	229	·3516	52	7 26·6	33·5
28	19 21·9	8·5	16 18·1	7·7	·2420	226	·3464	51	6 53·1	30·8
Oct. 8	19 30·4	10·9	16 10·4	15·3	·2646	217	·3413	52	6 22·3	28·4
18	19 41·3	12·9	15 55·1	24·1	·2863	206	·3361	52	5 53·9	26·4
28	19 54·2	14·8	15 31·0	33·9	·3069	191	·3309	52	5 27·5	24·6
Nov. 7	20 9·0	16·2	14 57·1	44·5	·3260	176	·3257	52	5 2·9	23·2
17	20 25·2	17·4	14 12·6	55·6	·3436	160	·3205	51	4 39·7	21·9
27	20 42·6	18·3	13 17·0	67·0	·3596	145	·3154	50	4 17·8	21·0
Dec. 7	21 0·9	19·2	12 10·0	78·3	·3741	130	·3104	49	3 56·8	20·2
17	21 20·1	19·9	10 51·7	89·2	·3871	116	·3055	48	3 36·6	19·6
27	21 40·0	+ 20·4	9 22·5	+ 99·5	·3987	+ 102	·3007	− 47	3 17·0	− 19·0
37	22 0·4		S. 7 43·0		0·4089		0·2960		2 58·0	

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	h m	m	° ′	′					h m	m
Jan. 1	7 44·6		N.20 47·9		0·0389		0·3144		12 58·4	
		−11·4		+66·5		+14		+38		−50·6
11	7 33·2		21 54·4		·0403		·3182		12 7·8	
		11·3		61·6		116		38		50·5
21	7 21·9		22 56·0		·0519		·3220		11 17·3	
		9·4		51·2		207		37		48·6
31	7 12·5		23 47·2		·0726		·3257		10 28·7	
		6·3		39·0		276		38		45·3
Feb. 10	7 6·2		24 26·2		·1002		·3295		9 43·4	
		−2·5		27·1		320		37		41·7
20	7 3·7		24 53·3		·1322		·3332		9 1·7	
		+1·3		16·3		341		37		37·9
Mar. 2	7 5·0		25 9·6		·1663		·3369		8 23·8	
		4·7		+6·7		346		36		34·6
12	7 9·7		25 16·3		·2009		·3405		7 49·2	
		7·6		−2·1		340		36		31·7
22	7 17·3		25 14·2		·2349		·3441		7 17·5	
		10·0		10·8		327		36		29·2
Apr. 1	7 27·3		25 3·4		·2676		·3477		6 48·3	
		11·9		19·3		309		34		27·4
11	7 39·2		24 44·1		·2985		·3511		6 20·9	
		13·5		28·0		289		34		25·9
21	7 52·7		24 16·1		·3274		·3545		5 55·0	
		14·6		36·5		270		33		24·7
May 1	8 7·3		23 39·6		·3544		·3578		5 30·3	
		15·5		45·0		249		32		23·9
11	8 22·8		22 54·6		·3793		·3610		5 6·4	
		16·1		53·2		229		31		23·3
21	8 38·9		22 1·4		·4022		·3641		4 43·1	
		16·6		61·1		209		31		22·8
31	8 55·5		21 0·3		·4231		·3672		4 20·3	
		16·9		68·5		191		29		22·5
June 10	9 12·4		19 51·8		·4422		·3701		3 57·8	
		17·0		75·3		173		28		22·4
20	9 29·4		18 36·5		·4595		·3729		3 35·4	
		17·1		81·7		155		27		22·3
30	9 46·5		17 14·8		·4750		·3756		3 13·1	
		17·1		87·2		138		26		22·2
July 10	10 3·6		15 47·6		·4888		·3782		2 50·9	
		17·1		92·0		121		25		22·3
20	10 20·7		14 15·6		·5009		·3807		2 28·6	
		17·1		96·2		106		24		22·3
30	10 37·8		12 39·4		·5115		·3831		2 6·3	
		17·0		99·5		89		23		22·4
Aug. 9	10 54·8		10 59·9		·5204		·3854		1 43·9	
		16·9		102·0		74		21		22·5
19	11 11·7		9 17·9		·5278		·3875		1 21·4	
		16·9		103·9		58		21		22·5
29	11 28·6		7 34·0		·5336		·3896		0 58·9	
		16·7		104·8		42		19		22·7
Sept. 8	11 45·3		5 49·2		·5378		·3915		0 36·2	
		16·7		105·0		27		18		22·6
18	12 2·0		4 4·2		·5405		·3933		0 13·6	
		16·7		104·3		+11		17		−25·1
28	12 18·7		2 19·9		·5416		·3950		23 48·5	
		16·6		102·8		−5		15		22·8
Oct. 8	12 35·3		N. 0 37·1		·5411		·3965		23 25·7	
		16·5		100·6		21		15		22·9
18	12 51·8		S. 1 3·5		·5390		·3980		23 2·8	
		16·4		97·4		38		13		22·9
28	13 8·2		2 40·9		·5352		·3993		22 39·9	
		16·3		93·4		55		12		23·1
Nov. 7	13 24 5		4 14·3		·5297		·4005		22 16·8	
		16·2		88·7		72		11		23·2
17	13 40·7		5 43·0		·5225		·4016		21 53·6	
		16·0		83·2		90		10		23·4
27	13 56·7		7 6·2		·5135		·4026		21 30·2	
		15·8		76·8		108		8		23·6
Dec. 7	14 12·5		8 23·0		·5027		·4034		21 6·6	
		15·5		69·9		127		7		24·0
17	14 28·0		9 32·9		·4900		·4041		20 42·6	
		15·1		62·2		145		6		24·3
27	14 43·1		10 35·1		·4755		·4047		20 18·3	
		+14·5		−54·1		−165		+5		−25·0
37	14 57·6		S. 11 29·2		0·4590		0·4052		19 53·3	

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	h m	m	° ′	′					h m	m
Jan. 1	4 21·6		N.23 55·9		0·0806		0·3214		9 36·4	
		−3·5		+15·8		+264		+ 7		−42·7
11	4 18·1		24 11·7		·1070		·3221		8 53·7	
		+0·4		19·5		300		8		38·7
21	4 18·5		24 31·2		·1370		·3229		8 15·0	
		4·1		23·7		314		10		35·1
31	4 22·6		24 54·9		·1684		·3239		7 39·9	
		7·5		26·8		318		11		31·8
Feb. 10	4 30·1		25 21·7		·2002		·3250		7 8·1	
		10·4		28·1		311		13		28·9
20	4 40·5		25 49·8		·2313		·3263		6 39·2	
		12·7		27·4		297		14		26·6
Mar. 2	4 53·2		26 17·2		·2610		·3277		6 12·6	
		14·8		24·6		282		16		24·5
12	5 8·0		26 41·8		·2892		·3293		5 48·1	
		16·5		19·7		264		17		22·9
22	5 24·5		27 1·5		·3156		·3310		5 25·2	
		17·8		13·2		246		18		21·6
Apr. 1	5 42·3		27 14·7		·3402		·3328		5 3·6	
		18·8		+5·1		229		19		20·5
11	6 1·1		27 19·8		·3631		·3347		4 43·1	
		19·7		−3·9		211		20		19·7
21	6 20·8		27 15·9		·3842		·3367		4 23·4	
		20·3		13·9		195		21		19·1
May 1	6 41·1		27 2·0		·4037		·3388		4 4·3	
		20·6		24·2		178		22		18·8
11	7 1·7		26 37·8		·4215		·3410		3 45·5	
		20·9		34·8		163		23		18·5
21	7 22·6		26 3·0		·4378		·3433		3 27·0	
		21·0		45·2		147		24		18·4
31	7 43·6		25 17·8		·4525		·3457		3 8·6	
		20·9		55·3		134		23		18·5
June 10	8 4·5		24 22·5		·4659		·3480		2 50·1	
		20·8		64·9		119		25		18·6
20	8 25·3		23 17·6		·4778		·3505		2 31·5	
		20·6		73·8		105		25		18·8
30	8 45·9		22 3·8		·4883		·3530		2 12·7	
July 10	9 6·2	20·3	20 41·9	81·9	·4975	92	·3555	25	1 53·6	19·1
		20·0		89·0		79		26		19·5
20	9 26·2		19 12·9		·5054		·3581		1 34·1	
		19·6		95·4		66		25		19·7
30	9 45·8		17 37·5		·5120		·3606		1 14·4	
		19·3		100·6		53		26		20·1
Aug. 9	10 5·1		15 56·9		·5173		·3632		0 54·3	
		19·0		105·0		39		26		20·4
19	10 24·1		14 11·9		·5212		·3658		0 33·9	
		18·6		108·1		26		26		20·8
29	10 42·7		12 23·8		·5238		·3684		0 13·1	
		18·3		110·5		+13		25		23·4
Sept. 8	11 1·0		10 33·3		·5251		·3709		23 49·7	
		18·0		111·7		−1		26		21·4
18	11 19·0		8 41·6		·5250		·3735		23 28·3	
		17·6		111·9		15		25		21·7
28	11 36·6		6 49·7		·5235		·3760		23 6·6	
		17·4		111·3		30		25		22·0
Oct. 8	11 54·0		4 58·4		·5205		·3785		22 44·6	
		17·1		109·4		45		25		22·3
18	12 11·1		3 9·0		·5160		·3810		22 22·3	
		16·8		106·8		60		24		22·7
28	12 27·9		N. 1 22·2		·5100		·3834		21 59·6	
Nov. 7	12 44·3	16·4	S. 0 21·1	103·3	·5023	77	·3859	25	21 36·6	23·0
		16·1		98·7		93		23		23·3
17	13 0·4		1 59·8		·4930		·3882		21 13·3	
		15·6		93·2		110		24		23·8
27	13 16·0		3 33·0		·4820		·3906		20 49·5	
		15·1		86·9		127		22		24·3
Dec. 7	13 31·1		4 59·9		·4693		·3928		20 25·2	
		14·6		79·8		146		22		24·9
17	13 45·7		6 19·7		·4547		·3950		20 0·3	
		13·7		72·1		164		22		25·7
27	13 59·4		7 31·8		·4383		·3972		19 34·6	
		+12·9		−63·4		−182		+21		−26·6
37	14 12·3		S. 8 35·2		0·4201		0·3993		19 8·0	

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	h m	m	° ′	′					h m	m
Jan. 1	1 30·2		N.13 36·7		0·4884		0·5398		6 45·8	
		+ 4·0		+ 8·9		+ 205		+ 2		— 35·3
11	1 34·2	5·6	13 45·6	18·5	·5089	198	·5400	1	6 10·5	33·7
21	1 39·8	7·0	14 4·1	27·0	·5287	187	·5401	1	5 36·8	32·3
31	1 46·8		14 31·1		·5474		·5402		5 4·5	
		8·2		33·9		175		1		31·2
Feb. 10	1 55·0		15 5·0		·5649	160	·5403		4 33·3	
		9·3		39·4				+ 1		30·0
20	2 4·3	10·2	15 44·4	43·7	·5809	143	·5404	0	4 3·3	29·2
Mar. 2	2 14·5	11·0	16 28·1	46·3	·5952	128	·5404	0	3 34·1	28·4
12	2 25·5		17 14·4		·6080		·5404		3 5·7	
		11·6		48·1		111		— 1		27·7
22	2 37·1		18 2·5		·6191		·5403		2 38·0	
		12·2		48·6		94		0		27·1
Apr. 1	2 49·3	12·8	18 51·1	48·3	·6285	78	·5403	1	2 10·9	26·7
11	3 2·1	13·1	19 39·4	47·0	·6363	60	·5402	1	1 44·2	26·2
21	3 15·2		20 26·4		·6423		·5401		1 18·0	
		13·5		45·0		45		2		25·9
May 1	3 28·7		21 11·4		·6468		·5399		0 52·1	
		13·7		42·3		28		2		25·6
11	3 42·4	14·0	21 53·7	39·0	·6496	+ 11	·5397	2	0 26·5	25·5
21	3 56·4	14·1	22 32·7	35·3	·6507	— 4	·5395	3	{23 33·2 / 0 0·0}	25·3
31	4 10·5		23 8·0		·6503		·5392		23 33·2	
		14·1		31·2		20		3		25·2
June 10	4 24·6		23 39·2		·6483		·5389		23 8·0	
		14·1		26·8		36		3		25·3
20	4 38·7	14·0	24 6·0	22·3	·6447	51	·5386	3	22 42·7	25·4
30	4 52·7	13·9	24 28·3	17·7	·6396	68	·5383	4	22 17·3	25·5
July 10	5 6·6		24 46·0		·6328		·5379		21 51·8	
		13·5		13·2		84		4		25·9
20	5 20·1		24 59·2		·6244		·5375		21 25·9	
		13·2		8·8		100		4		26·3
30	5 33·3	12·6	25 8·0	4·8	·6144	116	·5371	5	20 59·6	26·7
Aug. 9	5 45·9	12·0	25 12·8	+ 1·2	·6028	132	·5366	4	20 32·9	27·5
19	5 57·9		25 14·0		·5896		·5362		20 5·4	
		11·2		— 2·0		147		6		28·2
29	6 9·1		25 12·0		·5749		·5356		19 37·2	
		10·3		4·3		163		5		29·2
Sept. 8	6 19·4	9·1	25 7·7	6·1	·5586	178	·5351	6	19 8·0	30·4
18	6 28·5	7·8	25 1·6	6·8	·5408	190	·5345	6	18 37·6	31·7
28	6 36·3		24 54·8		·5218		·5339		18 5·9	
		6·2		6·9		201		6		33·2
Oct. 8	6 42·5		24 47·9		·5017		·5333		17 32·7	
		4·4		5·9		209		7		35·0
18	6 46·9	2·5	24 42·0	4·5	·4808	210	·5326	7	16 57·7	37·0
28	6 49·4	+ 0·2	24 37·5	2·5	·4598	206	·5319	7	16 20·7	39·3
Nov. 7	6 49·6		24 35·0		·4392		·5312		15 41·4	
		— 2·1		— 0·7		193		7		41·5
17	6 47·5		24 34·3		·4199		·5305		14 59 9	
		4·4		+ 0·5		169		8		43·8
27	6 43·1	6·4	24 34·8	+ 0·9	·4030	134	·5297	8	14 16·1	45·8
Dec. 7	6 36·7	8·0	24 35·7	— 0·6	·3896	88	·5289	8	13 30·3	47·4
17	6 28·7		24 35·1		·3808		·5281		12 42·9	
		8·8		2·8		— 35		8		48·1
27	6 19·9	— 8·8	24 32·3	— 5·6	·3773	+ 21	·5273	— 9	11 54·8	— 48·1
37	6 11·1		N.24 26·7		0·3794		0·5264		11 6·7	

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Month and Day.	Right Ascension. Noon.		Declination. Noon.		Log. of Distance from the Earth. Noon.		Log. of Distance from the Sun. Noon.		Meridian Passage.	
	h m	Δ_1 m	° ′	Δ_1 ′		Δ_1		Δ_1	h m	Δ_1 m
Jan. 1	16 2·8	+18·6	S. 17 8·6	−45·5	0·4926	−137	0·3845	−19	21 17·6	−20·8
11	16 21·4	18·4	17 54·1	36·5	·4789	153	·3826	20	20 56·8	21·0
21	16 39·8	18·1	18 30·6	27·4	·4636	171	·3806	19	20 35·8	21·3
31	16 57·9	17·7	18 58·0	18·5	·4465	188	·3787	20	20 14·5	21·8
Feb. 10	17 15·6	17·0	19 16·5	10·1	·4277	206	·3767	19	19 52·7	22·4
20	17 32·6	16·3	19 26·6	− 2·3	·4071	223	·3748	20	19 30·3	23·2
Mar. 2	17 48·9	15·2	19 28·9	+ 4·3	·3848	240	·3728	19	19 7·1	24·3
12	18 4·1	14·0	19 24·6	9·6	·3608	257	·3709	18	18 42·8	25·5
22	18 18·1	12·5	19 15·0	13·6	·3351	273	·3691	19	18 17·3	27·0
Apr. 1	18 30·6	10·7	19 1·4	15·4	·3078	287	·3672	18	17 50·3	28·7
11	18 41·3	8·7	18 46·0	15·3	·2791	297	·3654	18	17 21·6	30·9
21	18 50·0	6·2	18 30·7	12·8	·2494	302	·3636	17	16 50·7	33·3
May 1	18 56·2	3·5	18 17·9	8·1	·2192	300	·3619	17	16 17·4	36·0
11	18 59·7	+ 0·5	18 9·8	+ 1·2	·1892	286	·3602	16	15 41·4	39·0
21	19 0·2	− 2·6	18 8·6	− 7·1	·1606	257	·3586	16	15 2·4	42·2
31	18 57·6	5·6	18 15·7	15·8	·1349	211	·3570	15	14 20·2	45·1
June 10	18 52·0	8·1	18 31·5	23·7	·1138	146	·3555	14	13 35·1	47·4
20	18 43·9	9·5	18 55·2	29·6	·0992	− 66	·3541	13	12 47·7	48·8
30	18 34·4	9·6	19 24·8	32·7	·0926	+ 20	·3528	13	11 58·9	48·8
July 10	18 24·8	8·4	19 57·5	33·5	·0946	102	·3515	13	11 10·1	47·6
20	18 16·4	6·0	20 31·0	32·7	·1048	171	·3504	11	10 22·5	45·1
30	18 10·4	− 2·9	21 3·7	30·9	·1219	223	·3493	10	9 37·4	42·1
Aug. 9	18 7·5	+ 0·5	21 34·6	28·5	·1442	256	·3483	9	8 55·3	38·8
19	18 8·0	3·7	22 3·1	25·2	·1698	273	·3474	7	8 16·5	35·5
29	18 11·7	6·8	22 28·3	21·0	·1971	280	·3467	7	7 41·0	32·4
Sept. 8	18 18·5	9·5	22 49·3	15·5	·2251	277	·3460	6	7 8·6	29 8
18	18 28·0	11·8	23 4·8	8·9	·2528	268	·3454	4	6 38·8	27·6
28	18 39·8	13·7	23 13·7	− 1·0	·2796	257	·3450	3	6 11·2	25·6
Oct. 8	18 53·5	15·4	23 14·7	+ 7·9	·3053	243	·3447	2	5 45·6	23·9
18	19 8·9	16·7	23 6·8	17·6	·3296	227	·3445	− 1	5 21·7	22·7
28	19 25·6	17·7	22 49·2	27·9	·3523	212	·3444	0	4 59·0	21·7
Nov. 7	19 43·3	18·6	22 21·3	38·6	·3735	197	·3444	+ 2	4 37·3	20·8
17	20 1·9	19·1	21 42·7	49·3	·3932	180	·3446	3	4 16·5	20·3
27	20 21·0	19·5	20 53·4	59·9	·4112	165	·3449	3	3 56·2	19·8
Dec. 7	20 40·5	19·8	19 53·5	70·2	·4277	150	·3452	5	3 36·4	19·6
17	21 0·3	19·9	18 43·3	79·1	·4427	133	·3457	6	3 16·8	19·6
27	21 20·2	+19·9	17 24·2	+88·0	·4560	+120	·3463	+ 7	2 57·2	−19·4
37	21 40·1		S. 15 56·2		0·4680		0·3470		2 37·8	

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Month and Day.	Right Ascension. Noon.	Δ₁	Declination. Noon.	Δ₂	Log. of Distance from the Earth. Noon.	Δ₁	Log. of Distance from the Sun. Noon.	Δ₁	Meridian Passage.	Δ₁
	h m	m	° ′	′					h m	m
Jan. 1	23 21·9	+ 17·9	N. 1 12·6	+ 78·4	0·3455	+ 252	0·3243	+ 50	4 38·1	− 21·5
11	23 39·8	18·1	2 31·0	84·3	·3707	233	·3293	50	4 16·6	21·3
21	23 57·9	18·4	3 55·3	88·2	·3940	215	·3343	50	3 55·3	21·0
31	0 16·3	18·4	5 23·5	90·6	·4155	197	·3393	50	3 34·3	20·9
Feb. 10	0 34·7	18·6	6 54·1	91·6	·4352	178	·3443	49	3 13·4	20·8
20	0 53·3	18·7	8 25·7	91·0	·4530	162	·3492	48	2 52·6	20·7
Mar. 2	1 12·0	18·8	9 56·7	89·2	·4692	145	·3540	48	2 31·9	20·6
12	1 30·8	18·9	11 25·9	86·4	·4837	128	·3588	47	2 11·3	20·5
22	1 49·7	18·9	12 52·3	82·2	·4965	111	·3635	46	1 50·8	20·5
Apr. 1	2 8·6	19·0	14 14·5	77·2	·5076	95	·3681	45	1 30·3	20·4
11	2 27·6	19·0	15 31·7	71·4	·5171	80	·3726	45	1 9·9	20·4
21	2 46·6	19·1	16 43·1	64·7	·5251	64	·3771	43	0 49·5	20·3
May 1	3 5·7	19·0	17 47·8	57·5	·5315	48	·3814	42	0 29·2	20·4
11	3 24·7	19·0	18 45·3	49·7	·5363	33	·3856	40	☊ 8·8	22·5
21	3 43·7	18·8	19 35·0	41·5	·5396	18	·3896	40	23 46·3	20·6
31	4 2·5	18·7	20 16·5	33·0	·5414	+ 2	·3936	38	23 25·7	20·7
June 10	4 21·2	18·5	20 49·5	24·3	·5416	− 13	·3974	37	23 5·0	20·9
20	4 39·7	18·2	21 13·8	15·6	·5403	30	·4011	36	22 44·1	21·2
30	4 57·9	17·8	21 29·4	+ 6·9	·5373	45	·4047	35	22 22·9	21·7
July 10	5 15·7	17·3	21 36·3	− 1·5	·5328	62	·4082	33	22 1·2	22·1
20	5 33·0	16·8	21 34·8	9·6	·5266	78	·4115	32	21 39·1	22·6
30	5 49·8	16·1	21 25·2	17·2	·5188	96	·4147	31	21 16·5	23·4
Aug. 9	6 5·9	15·3	21 8·0	24·3	·5092	113	·4178	30	20 53·1	24·1
19	6 21·2	14·4	20 43·7	30·6	·4979	130	·4208	28	20 29·0	25·1
29	6 35·6	13·4	20 13·1	36·1	·4849	148	·4236	27	20 3·9	26·1
Sept. 8	6 49·0	12·1	19 37·0	40·7	·4701	167	·4263	26	19 37·8	27·4
18	7 1·1	10·7	18 56·3	44·1	·4534	183	·4289	24	19 10·4	28·8
28	7 11·8	9·1	18 12·2	46·2	·4351	199	·4313	23	18 41·6	30·4
Oct. 8	7 20·9	7·2	17 26·0	47·2	·4152	214	·4336	22	18 11·2	32·3
18	7 28·1	5·1	16 38·8	46·3	·3938	223	·4358	20	17 38·9	34·4
28	7 33·2	2·7	15 52·5	44·1	·3715	229	·4378	20	17 4·5	36·8
Nov. 7	7 35·9	0·0	15 8·4	40·0	·3486	224	·4398	18	16 27·7	39·4
17	7 35·9	− 2·7	14 28·4	34·4	·3262	211	·4416	16	15 48·3	42·3
27	7 33·2	5·5	13 54·0	27·3	·3051	182	·4432	16	15 6·0	44·9
Dec. 7	7 27·7	8·1	13 26·7	19·1	·2869	138	·4448	14	14 21·1	47·5
17	7 19·6	9·8	13 7·6	10·6	·2731	81	·4462	13	13 33·6	49·1
27	7 9·8	− 10·7	12 57·0	− 2·2	·2650	− 11	·4475	+ 12	12 44·5	− 50·1
37	6 59·1		N. 12 54·8		0·2639		0·4487		11 54·4	

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	h m	m	° ′	′					h m	m
Jan. 1	20 17·9	+18·7	S. 32 24·5	+64·7	0·5665	+42	0·4471	−2	1 34·4	−20·7
11	20 36·6	18·5	31 19·8	69·9	·5707	24	·4469	3	1 13·7	20·9
21	20 55·1	18·3	30 9·9	74·4	·5731	+9	·4466	3	0 52·8	21·1
31	21 13·4	18·0	28 55·5	78·1	·5740	−7	·4463	3	0 31·7	21·4
Feb. 10	21 31·4	17·7	27 37·4	81·2	·5733	22	·4460	4	0 10·3	23·9
20	21 49·1	17·2	26 16·2	83·1	·5711	39	·4456	4	23 46·4	22·2
Mar. 2	22 6·3	16·9	24 53·1	84·3	·5672	54	·4452	4	23 24·2	22·6
12	22 23·2	16·4	23 28·8	84·6	·5618	70	·4447	5	23 1·6	23·0
22	22 39·6	15·9	22 4·2	83·7	·5548	85	·4441	6	22 38·6	23·5
Apr. 1	22 55·5	15·5	20 40·5	81·9	·5463	101	·4435	6	22 15·1	24·0
11	23 11·0	14·9	19 18·6	79·0	·5362	117	·4429	7	21 51·1	24·5
21	23 25·9	14·4	17 59·6	75·1	·5245	132	·4422	8	21 26·6	25·1
May 1	23 40·3	13·7	16 44·5	70·2	·5113	149	·4414	8	21 1·5	25·7
11	23 54·0	13·0	15 34·3	64·2	·4964	163	·4406	8	20 35·8	26·4
21	0 7·0	12·3	14 30·1	56·9	·4801	181	·4398	9	20 9·4	27·2
31	0 19·3	11·3	13 33·2	48·7	·4620	195	·4389	9	19 42·2	28·0
June 10	0 30·6	10·3	12 44·5	39·2	·4425	211	·4380	10	19 14·2	29·2
20	0 40·9	9·1	12 5·3	28·9	·4214	223	·4370	10	18 45·0	30·5
30	0 50·0	7·5	11 36·4	17·4	·3991	235	·4360	10	18 14·5	31·9
July 10	0 57·5	5·8	11 19·0	+5·3	·3756	243	·4350	11	17 42·6	33·6
20	1 3·3	3·9	11 13·7	−6·9	·3513	246	·4339	11	17 9·0	35·7
30	1 7·2	+1·5	11 20·6	18·9	·3267	243	·4328	12	16 33·3	38·0
Aug. 9	1 8·7	−1·1	11 39·5	29·3	·3024	229	·4316	12	15 55·3	40·5
19	1 7·6	3·7	12 8·8	36·3	·2795	203	·4304	13	15 14·8	43·2
29	1 3·9	6·3	12 45·1	38·4	·2592	163	·4291	12	14 31·6	45·8
Sept. 8	0 57·6	8·6	13 23·5	34·2	·2429	109	·4279	14	13 45·8	47·9
18	0 49·0	10·6	13 57·7	22·8	·2320	−45	·4265	13	12 57·9	49·3
28	0 39·0	10·5	14 20·5	−5·5	·2275	+26	·4252	14	12 8·6	49·7
Oct. 8	0 28·5	9·7	14 26·0	+15·6	·2301	92	·4238	14	11 18·9	48·9
18	0 18·8	8·0	14 10·4	37·0	·2393	150	·4224	14	10 30·0	47·2
28	0 10·8	5·6	13 33·4	56·5	·2543	192	·4210	15	9 42·8	44·8
Nov. 7	0 5·2	3·0	12 36·9	73·1	·2735	221	·4195	15	8 58·0	42·2
17	0 2·2	−0·2	11 23·8	86·2	·2956	237	·4180	15	8 15·8	39·5
27	0 2·0	+2·3	9 57·6	96·7	·3193	241	·4165	15	7 36·3	36·9
Dec. 7	0 4·3	4·5	8 20·9	104·6	·3434	237	·4150	16	6 59·4	34·8
17	0 8·8	6·5	6 36·3	110·5	·3671	228	·4134	16	6 24·6	32·8
27	0 15·3	+8·2	4 45·8	+115·3	·3899	+216	·4118	−15	5 51·8	−31·1
37	0 23·5		S. 2 50·5		0·4115		0·4103		5 20·7	

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	h m	m	° ′	′					h m	m
Jan. 1	2 43·6		N.10 7·6		0·3231		0·4376		7 58·9	
		+ 0·5		+44·0		+220		−25		−38·8
11	2 44·1		10 51·6		·3451		·4351		7 20·1	
		2·9		53·1		223		26		36·3
21	2 47·0		11 44·7		·3674		·4325		6 43·8	
		5·3		60·1		219		28		34·0
31	2 52·3		12 44·8		·3893		·4297		6 9·8	
		7·4		65·3		210		27		31·9
Feb. 10	2 59·7		13 50·1		·4103		·4270		5 37·9	
		9·2		68·6		196		28		30·1
20	3 8·9		14 58·7		·4299		·4242		5 7·8	
		10·8		70·2		181		28		28·5
Mar. 2	3 19·7		16 8·9		·4480		·4214		4 39·3	
		12·3		70·3		164		29		27·1
12	3 32·0		17 19·2		·4644		·4185		4 12·2	
		13·5		68·9		146		30		25·9
22	3 45·5		18 28·1		·4790		·4155		3 46·3	
		14·7		66·3		129		30		24·7
Apr. 1	4 0·2		19 34·4		·4919		·4125		3 21·6	
		15·7		62·1		113		30		23·7
11	4 15·9		20 36·5		·5032		·4095		2 57·9	
		16·6		57·2		95		31		22·8
21	4 32·5		21 33·7		·5127		·4064		2 35·1	
		17·4		51·1		79		31		22·0
May 1	4 49·9		22 24·8		·5206		·4033		2 13·1	
		18·1		44·0		63		32		21·2
11	5 8·0		23 8·8		·5269		·4001		1 51·9	
		18·7		36·2		48		31		20·6
21	5 26·7		23 45·0		·5317		·3970		1 31·3	
		19·4		27·7		32		32		20·1
31	5 46·1		24 12·7		·5349		·3938		1 11·2	
		19·8		18·6		19		32		19·6
June 10	6 5·9		24 31·3		·5368		·3906		0 51·6	
		20·1		+ 9·1		+ 4		31		19·2
20	6 26·0		24 40·4		·5372		·3875		0 32·4	
		20·5		− 0·7		− 10		33		19·0
30	6 46·5		24 39·7		·5362		·3842		0 13·4	
		20·7		10·5		23		31		20·6
July 10	7 7·2		24 29·2		·5339		·3811		23 52·8	
		20·8		20·4		37		32		18·6
20	7 28·0		24 8·8		·5302		·3779		23 34·2	
		20·8		29·9		50		31		18·5
30	7 48·8		23 38·9		·5252		·3748		23 15·7	
		20·8		39·0		64		31		18·6
Aug. 9	8 9·6		22 59·9		·5188		·3717		22 57·1	
		20·7		47·7		77		31		18·8
19	8 30·3		22 12·2		·5111		·3686		22 38·3	
		20·5		55·4		91		30		18·9
29	8 50·8		21 16·8		·5020		·3656		22 19·4	
		20·3		62·3		104		29		19·1
Sept. 8	9 11·1		20 14·5		·4916		·3627		22 0·3	
		20·1		68·1		118		28		19·3
18	9 31·2		19 6·4		·4798		·3599		21 41·0	
		19·8		72·9		133		28		19·7
28	9 51·0		17 53·5		·4665		·3571		21 21·3	
		19·4		76·4		147		27		20·0
Oct. 8	10 10·4		16 37·1		·4518		·3544		21 1·3	
		19·0		77·6		162		25		20·4
18	10 29·4		15 19·5		·4356		·3519		20 40·9	
		18·6		78·1		178		24		20·9
28	10 48·0		14 1·4		·4178		·3495		20 20·0	
		18·1		76·6		194		24		21·3
Nov. 7	11 6·1		12 44·8		·3984		·3471		19 58·7	
		17·5		73·3		209		22		21·9
17	11 23·6		11 31·5		·3775		·3449		19 36·8	
		16·8		67·9		226		20		22·6
27	11 40·4		10 23·6		·3549		·3429		19 14·2	
		16·0		60·4		243		18		23·5
Dec. 7	11 56·4		9 23·2		·3306		·3411		18 50·7	
		15·1		50·6		258		17		24·5
17	12 11·5		8 32·6		·3048		·3394		18 26·2	
		13·9		38·7		272		15		25·6
27	12 25·4		7 53·9		·2776		·3379		18 0·6	
		+ 12·4		−24·7		−286		−13		−26·9
37	12 37·8		N. 7 29·2		0·2490		0·3366		17 33 7	

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MEAN TIME AT GREENWICH.

Month and Day.	Right Ascension. Noon.		Declination. Noon.		Log. of Distance from the Earth. Noon.		Log. of Distance from the Sun. Noon.		Meridian Passage.	
	h m	Δ_1 m	° ′	Δ_1 ′		Δ_1		Δ_1	h m	Δ_1 m
Jan. 1	10 46·4	— 2·0	S. 0 35·5	—44·9	0·3436	—201	0·4467	+28	16 0·4	—41·5
11	10 44·4	4·5	1 20·4	29·8	·3235	177	·4495	26	15 18·9	43·9
21	10 39·9	6·7	1 50·2	—13·3	·3058	139	·4521	26	14 35·0	46·2
31	10 33·2	8·5	2 3·5	+ 3·3	·2919	87	·4547	25	13 48·8	47·9
Feb. 10	10 24·7	9·5	2 0·2	18·4	·2832	— 25	·4572	25	13 0·9	48·7
20	10 15·2	9·4	1 41·8	29·6	·2807	+ 41	·4597	24	12 12·2	48·6
Mar. 2	10 5·8	8·4	1 12·2	36·1	·2848	104	·4621	23	11 23·6	47·6
12	9 57·4	6·7	S. 0 36·1	37·3	·2952	158	·4644	22	10 36·0	45·9
22	9 50·7	4·5	N. 0 1·2	33·8	·3110	198	·4666	21	9 50·1	43·7
Apr. 1	9 46·2	— 2·0	0 35·0	27·0	·3308	226	·4687	21	9 6·4	41·2
11	9 44·2	+ 0·3	1 2·0	17·9	·3534	241	·4708	20	8 25·2	39·0
21	9 44·5	2·5	1 19·9	+ 7·7	·3775	244	·4728	19	7 46·2	36·7
May 1	9 47·0	4·5	1 27·6	— 2·7	·4019	242	·4747	18	7 9·5	34·9
11	9 51·5	6·1	1 24·9	13·1	·4261	234	·4765	17	6 34·6	33·2
21	9 57·6	7·5	1 11·8	22·9	·4495	222	·4782	17	6 1·4	31·8
31	10 5·1	8·6	0 48·9	32·2	·4717	207	·4799	16	5 29·6	30·7
June 10	10 13·7	9·7	N. 0 16·7	40·7	·4924	192	4815	15	4 58·9	29·7
20	10 23·4	10·4	S. 0 24·0	48·6	·5116	175	·4830	14	4 29·2	28·9
30	10 33·8	11·1	1 12·6	55·7	·5291	160	·4844	14	4 0·3	28·3
July 10	10 44·9	11·6	2 8·3	62·2	·5451	142	·4858	13	3 32·0	27·7
20	10 56·5	12·1	3 10·5	67·8	·5593	126	·4871	12	3 4·3	27·3
30	11 8·6	12·5	4 18·3	72·7	·5719	109	·4883	11	2 37·0	26·9
Aug. 9	11 21·1	12·7	5 31·0	77·1	·5828	92	·4894	10	2 10·1	26·7
19	11 33·8	13·0	6 48·1	80·8	·5920	76	·4904	10	1 43·4	26·4
29	11 46·8	13·2	8 8·9	83·7	·5996	59	·4914	9	1 17·0	26·1
Sept. 8	12 0·0	13·4	9 32·6	86·1	·6055	43	·4923	8	0 50·9	26·0
18	12 13·4	13·5	10 58·7	87·7	·6098	26	·4931	7	„0 24·9	28·5
28	12 26·9	13·6	12 26·4	88·8	·6124	+ 9	·4938	7	23 56·4	25·7
Oct. 8	12 40·5	13·7	13 55·2	89·3	·6133	— 7	·4945	6	23 30·7	25·7
18	12 54·2	13·7	15 24·5	89·1	·6126	24	·4951	4	23 5·0	25·7
28	13 7·9	13·7	16 53·6	88·4	·6102	41	·4955	4	22 39·3	25·7
Nov. 7	13 21·6	13·6	18 22·0	87 1	·6061	59	·4959	4	22 13·6	25·7
17	13 35·2	13·5	19 49·1	85·3	·6002	77	·4963	3	21 47·9	26·0
27	13 48·7	13·2	21 14·4	83·1	·5925	93	·4966	1	21 21·9	26·2
Dec. 7	14 1·9	12·9	22 37·5	80·5	·5832	112	·4967	1	20 55·7	26·5
17	14 14·8	12·4	23 58·0	77·7	·5720	131	·4968	+ 1	20 29·2	27·0
27	14 27·2	+ 11·8	25 15·7	—73·8	·5589	—147	·4969	— 1	20 2·2	—27·7
37	14 39·0		S. 26 29·5		0·5442		0·4968		19 34·5	

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Month and Day.	Right Ascension. Noon.	Δ₁	Declination. Noon.	Δ₂	Log. of Distance from the Earth. Noon.	Δ₁	Log. of Distance from the Sun. Noon.	Δ₂	Meridian Passage.	Δ₁
	h m	m	° ′	′					h m	m
Jan. 1	14 18·1	9·5	S. 11 32·2	39·1	0·5574	−172	0·5200	2	19 32·4	−30·0
11	14 27·6	8·5	12 11·3	31·7	·5402	187	·5198	3	19 2·4	31·0
21	14 36·1	7·2	12 43·0	23·8	·5215	201	·5195	4	18 31·4	32·2
31	14 43·3	5·9	13 6·8	15·2	·5014	211	·5191	4	17 59·2	33·6
Feb. 10	14 49·2	4·1	13 22·0	−6·4	·4803	218	·5187	5	17 25·6	35·4
20	14 53·3	2·2	13 28·4	+2·9	·4585	218	·5182	5	16 50·2	37·2
Mar. 2	14 55·5	0·2	13 25·5	12·2	·4367	212	·5177	5	16 13·0	39·3
12	14 55·7	−2·0	13 13·3	21·4	·4155	197	·5172	6	15 33·7	41·4
22	14 53·7	4·0	12 51·9	29·9	·3958	170	·5166	7	14 52·3	43·4
Apr. 1	14 49·7	5·8	12 22·0	36·8	·3788	133	·5159	7	14 8·9	45·2
11	14 43·9	7·2	11 45·2	41·4	·3655	86	·5152	7	13 23·7	46·5
21	14 36·7	7·9	11 3·8	42·6	·3569	−31	·5145	8	12 37·2	47·2
May 1	14 28·8	7·6	10 21·2	39·4	·3538	+23	·5137	8	11 50·0	46·9
11	14 21·2	7·0	9 41·8	33·3	·3561	76	·5129	9	11 3·1	46·2
21	14 14·2	5·5	9 8·5	23·8	·3637	120	·5120	9	10 16·9	44·8
31	14 8·7	3·8	8 44·7	12·8	·3757	155	·5111	10	9 32·1	43·0
June 10	14 4·9	−1·9	8 31·9	+1·0	·3912	178	·5101	10	8 49·1	41·1
20	14 3·0	+0·2	8 30·9	−10·6	·4090	192	·5091	11	8 8·0	39·0
30	14 3·2	2·2	8 41·5	21·0	·4282	198	·5080	11	7 29·0	37·2
July 10	14 5·4	3·9	9 2·5	30·3	·4480	197	·5069	11	6 51·8	35·3
20	14 9·3	5·5	9 32·8	38·0	·4677	190	·5058	12	6 16·5	33·8
30	14 14·8	7·1	10 10·8	44·2	·4867	181	·5046	12	5 42·7	32·2
Aug. 9	14 21·9	8·4	10 55·0	49·2	·5048	170	·5034	13	5 10·5	31·0
19	14 30·3	9·5	11 44·2	52·6	·5218	156	·5021	13	4 39 5	29·8
29	14 39·8	10·6	12 36·8	54·7	·5374	141	·5008	14	4 9·7	28·7
Sept. 8	14 50·4	11·6	13 31·5	55·7	·5515	126	·4994	14	3 41·0	27·9
18	15 2·0	12·4	14 27·2	55·5	·5641	110	·4980	14	3 13·1	26·9
28	15 14·4	13·1	15 22·7	54·3	·5751	95	·4966	15	2 46·2	26·2
Oct. 8	15 27·5	13·9	16 17·0	52·0	·5846	77	·4951	15	2 20·0	25·6
18	15 41·4	14·4	17 9·0	49·0	·5923	62	·4936	16	1 54·4	24·9
28	15 55·8	15·0	17 58·0	44·9	·5985	45	·4920	16	1 29·5	24·4
Nov. 7	16 10·8	15·4	18 42·9	40·2	·6030	28	·4904	17	1 5·1	23·9
17	16 26·2	15·9	19 23·1	34·8	·6058	+12	·4887	16	0 41·2	−23·6
27	16 42·1	16·1	19 57·9	28·8	·6070	−5	·4871	18	0 17·6	25·6
Dec. 7	16 58·2	16·3	20 26·7	22·3	·6065	22	·4853	17	23 52·0	23·0
17	17 14·5	16·4	20 49·0	15·6	·6043	38	·4836	18	23 29·0	23·0
27	17 30·9	+16·5	21 4·6	−8·7	·6005	−56	·4818	−18	23 6·0	−22·9
37	17 47·4		S. 21 13·3		0·5949		0·4800		22 43·1	

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MEAN TIME AT GREENWICH.

Month and Day.	Right Ascension. Noon.	Δ_1	Declination. Noon.	Δ_1	Log. of Distance from the Earth. Noon.	Δ_1	Log. of Distance from the Sun. Noon.	Δ_1	Meridian Passage.	Δ_1
	h m	m	° ′	′					h m	m
Jan. 1	0 17·6	+10·3	S. 4 9·9	+83·9	0·4115	+234	0·4187	+18	5 33·6	−29·1
11	0 27·9	11·5	2 46·0	87·1	·4349	217	·4205	18	5 4·5	27·9
21	0 39·4	12·3	S. 1 18·9	90·0	·4566	198	·4223	18	4 36·6	27·0
31	0 51·7		N. 0 11·1		·4764		·4241		4 9·6	
		13·0		92·5		178		17		26·4
Feb. 10	1 4·7		1 43·6		·4942		·4258		3 43·2	
20	1 18·3	13·6	3 17·4	93·8	·5101	159	·4274	16	3 17·4	25·8
Mar. 2	1 32·4	14·1	4 50·8	93·4	·5241	140	·4289	15	2 52·2	25·2
12	1 47·0	14·6	6 23·0	92·2	·5364	123	·4304	15	2 27·4	24·8
		15·0		90·0		104		14		24·4
22	2 2·0		7 53·0		·5468		·4318		2 3·0	
Apr. 1	2 17·3	15·3	9 20·1	87·1	·5555	87	·4332	14	1 38·9	24·1
11	2 32·9	15·6	10 43·5	83·4	·5626	71	·4345	13	1 15·1	23·8
21	2 48·8	15·9	12 2·4	78·9	·5679	53	·4357	12	0 51·6	23·5
		16·1		73·9		37		11		23·3
May 1	3 4·9		13 16·3		·5716		·4368		0 28·3	
11	3 21·1	16·2	14 24·6	68·3	·5738	22	·4378	10	0 5·2	23·1
21	3 37·5	16·4	15 26·8	62·2	·5743	+5	·4388	10	23 39·9	25·3
31	3 53·9	16·4	16 22·4	55·6	·5733	−10	·4398	10	23 10·9	23·0
		16·5		48·7		26		8		22·9
June 10	4 10·4		17 11·1		·5707		·4406		22 54·0	
20	4 26·8	16·4	17 52·8	41·7	·5665	42	·4414	8	22 31·0	23·0
30	4 43·1	16·3	18 27·1	34·3	·5607	58	·4421	7	22 7·9	23·1
July 10	4 59·2	16·1	18 54·3	27·2	·5533	74	·4427	6	21 44·6	23·3
		15·8		20·1		91		5		23·6
20	5 15·0		19 14·4		·5442		·4432		21 21·0	
30	5 30·4	15·4	19 27·5	13·1	·5335	107	·4437	5	20 57·0	24·0
Aug. 9	5 45·3	14·9	19 34·2	6·7	·5210	125	·4441	4	20 32·5	24·5
19	5 59·6	14·3	19 34·8	+0·6	·5068	142	·4444	3	20 7·3	25·2
		13·5		−4·5		159		2		25·9
29	6 13·1		19 30·3		·4909		·4446		19 41·4	
Sept. 8	6 25·7	12·6	19 21·3	9·0	·4732	177	·4448	2	19 14·5	26·9
18	6 37·2	11·5	19 9·0	12·3	·4538	194	·4449	+1	18 46·5	28·0
28	6 47·3	10·1	18 54·7	14·3	·4327	211	·4449	0	18 17·1	29·4
		8·5		14·9		226		0		31·0
Oct. 8	6 55·8		18 39·8		·4101		·4449	−2	17 46·1	
18	7 2·4	6·6	18 25·8	14·0	·3862	239	·4447	2	17 13·3	32·8
28	7 6·9	4·5	18 14·6	11·2	·3616	246	·4445	2	16 38·3	35·0
Nov. 7	7 9·0	+2·1	18 7·8	6·8	·3367	249	·4442	3	16 0·8	37·5
		−0·6		−1·0		241		3		40·0
17	7 8·4		18 6·8		·3126		·4439		15 20·8	
27	7 5·0	3·4	18 12·7	+5·9	·2906	220	·4434	5	14 37·9	42·9
Dec. 7	6 58·8	6·2	18 25·5	12·8	·2720	186	·4429	5	13 52·3	45·6
17	6 50·3	8·5	18 44·6	19·1	·2586	134	·4424	5	13 4·4	47·9
		10·0		23·5		−70		7		49·4
27	6 40·3		19 8·1		·2516		·4417		12 15·0	
37	6 29·8	−10·5	N. 19 34·1	+26·0	0·2518	+2	0·4410	−7	11 25·3	−49·7

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	h m	m	° ′	′					h m	m
Jan. 1	12 24·5		N. 0 22·1		0·3825		0·4296		17 38·6	
		+ 5·6		+ 0·7		−235		+20		−33·8
11	12 30·1		0 22·8		·3590		·4316		17 4·8	
		3·6		18·0		238		19		35·9
21	12 33·7		0 40·8		·3352		·4335		16 28·9	
		+ 1·2		36·2		233		18		38·3
31	12 34·9		1 17·0		·3119		·4353		15 50·6	
		− 1·4		54·9		216		16		40·8
Feb. 10	12 33·5		2 11·9		·2903		·4369		15 9·8	
		3·8		71·8		185		15		43·3
20	12 29·7		3 23·7		·2718		·4384		14 26·5	
		6·2		84·9		137		14		45·6
Mar. 2	12 23·5		4 48·6		·2581		·4398		13 40·9	
		7·9		91·7		76		12		47·3
12	12 15·6		6 20·3		·2505		·4410		12 53·6	
		8·9		90·1		− 7		11		48·1
22	12 6·7		7 50·4		·2498		·4421		12 5·5	
		8·8		80·2		+ 66		10		48·1
Apr. 1	11 57·9		9 10·6		·2564		·4431		11 17·4	
		7·9		63·8		128		9		47·0
11	11 50·0		10 14·4		·2692		·4440		10 30·4	
		6·1		44·0		178		7		45·3
21	11 43·9		10 58·4		·2870		·4447		9 45·1	
		3·8		22·7		216		6		43·1
May 1	11 40·1		11 21·1		·3086		·4453		9 2·0	
		− 1·5		+ 3·1		235		5		40·7
11	11 38·6		11 24·2		·3321		·4458		8 21·3	
		+ 0·8		−14·5		244		3		38·4
21	11 39·4		11 9·7		·3565		·4461		7 42·9	
		3·0		29·4		243		+ 2		36·3
31	11 42·4		10 40·3		·3808		·4463		7 6·6	
		4·8		42·1		236		0		34·5
June 10	11 47·2		9 58·2		·4044		·4463		6 32·1	
		6·5		52·5		225		0		32·8
20	11 53·7		9 5·7		·4269		·4463		5 59·3	
		7·9		61·2		210		− 2		31·4
30	12 1·6		8 4·5		·4479		·4461		5 27·9	
		9·1		68·1		195		3		30·2
July 10	12 10·7		6 56·4		·4674		·4458		4 57·7	
		10·2		73·7		177		4		29·2
20	12 20·9		5 42·7		·4851		·4454		4 28·5	
		11·0		78·2		160		6		28·4
30	12 31·9		4 24·5		·5011		·4448		4 0·1	
		11·8		81·6		143		7		27·6
Aug. 9	12 43·7		3 2·9		·5154		·4441		3 32·5	
		12·5		83·9		125		8		26·8
19	12 56·2		1 39·0		·5279		·4433		3 5·7	
		13·1		85·3		108		9		26·3
29	13 9·3		N. 0 13·7		·5387		·4424		2 39·4	
		13·6		85·9		91		11		25·8
Sept. 8	13 22·9		S. 1 12·2		·5478		·4413		2 13·6	
		14·1		85·5		73		12		25·3
18	13 37·0		2 37·7		·5551		·4401		1 48·3	
		14·5		84·3		57		14		24·8
28	13 51·5		4 2·0		·5608		·4387		1 23·5	
		15·0		82·3		39		14		24·4
Oct. 8	14 6·5		5 24·3		·5647		·4373		0 59·1	
		15·4		79·3		23		16		24·0
18	14 21·9		6 43·6		·5670		·4357		0 35·1	
		15·8		75·6		+ 5		18		23·6
28	14 37·7		7 59·2		·5675		·4339		0 11·5	
		16·0		70·9		− 12		18		25·6
Nov. 7	14 53·7		9 10·1		·5663		·4321		23 45·9	
		16·4		65·7		29		20		23·0
17	15 10·1		10 15·8		·5634		·4301		23 22·9	
		16·6		59·4		46		22		22·8
27	15 26·7		11 15·2		·5588		·4279		23 0·1	
		16·8		52·6		64		22		22·6
Dec. 7	15 43·5		12 7·8		·5524		·4257		22 37·5	
		16·9		44·9		82		24		22·5
17	16 0·4		12 52·7		·5442		·4233		22 15·0	
		17·0		37·1		99		26		22·4
27	16 17·4		13 29·8		·5343		·4207		21 52·6	
		+ 16·9		−28·3		−118		−26		−22·4
37	16 34·3		S. 13 58·1		0·5225		0·4181		21 30·2	

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	h m	m	° ′	′					h m	m
Jan. 1	11 22·1		N. 2 14·3		0·3149		0·4114		16 36·2	
		+ 1·7		— 15·0		—235		+25		—37·8
11	11 23·8		1 59·3		·2914		·4139		15 58·4	
		— 1·0		+ 2·4		221		25		40·4
21	11 22·8		2 1·7		·2693		·4164		15 18·0	
		3·6		20·3		195		24		43·1
31	11 19·2		2 22·0		·2498		·4188		14 34·9	
		6·1		37·2		151		23		45·6
Feb. 10	11 13·1		2 59·2		·2347		·4211		13 49·3	
		8·0		51·1		92		23		47·3
20	11 5·1		3 50·3		·2255		·4234		13 2·0	
		9·1		59·3		— 21		21		48·4
Mar. 2	10 56·0		4 49·6		·2234		·4255		12 13·6	
		9·1		60·9		+ 54		21		48·4
12	10 46·9		5 50·5		·2288		·4276		11 25·2	
		8·1		55·7		124		20		47·3
22	10 38·8		6 46·2		·2412		·4296		10 37·9	
		6·3		45·0		181		19		45·4
Apr. 1	10 32·5		7 31·2		·2593		·4315		9 52·5	
		3·9		31·3		223		18		43·1
11	10 28·6		8 2·5		·2816		·4333		9 9·4	
		— 1·3		16·4		249		18		40·6
21	10 27·3		8 18·9		·3065		·4351		8 28·8	
		+ 1·1		+ 1·7		262		16		38·2
May 1	10 28·4		8 20·6		·3327		·4367		7 50·6	
		3·3		— 12·0		263		16		35·9
11	10 31·7		8 8·6		·3590		·4383		7 14·7	
		5·3		24·4		258		15		33·9
21	10 37·0		7 44·2		·3848		·4398		6 40·8	
		7·0		35·5		247		14		32·4
31	10 44·0		7 8·7		·4095		·4412		6 8·4	
		8·4		45·3		233		13		31·0
June 10	10 52·4		6 23·4		·4328		·4425		5 37·4	
		9·5		53·8		218		12		29·8
20	11 1·9		5 29·6		·4546		·4437		5 7·6	
		10·5		61·3		200		11		28·8
30	11 12·4		4 28·3		·4746		·4448		4 38·8	
		11·3		67·7		184		10		28·0
July 10	11 23·7		3 20·6		·4930		·4458		4 10·8	
		12·0		73·2		166		10		27·4
20	11 35·7		2 7·4		·5096		·4468		3 43·4	
		12·6		77·7		149		9		26·8
30	11 48·3		N. 0 49·7		·5245		·4477		3 16·6	
		13·0		81·4		131		7		26·4
Aug. 9	12 1·3		S. 0 31·7		·5376		·4484		2 50·2	
		13·5		84·3		114		7		25·9
19	12 14·8		1 56·0		·5490		·4491		2 24·3	
		13·8		86·4		97		6		25·5
29	12 28·6		3 22·4		·5587		·4497		1 58·8	
		14·1		87·6		81		5		25·3
Sept. 8	12 42·7		4 50·0		·5668		·4502		1 33·5	
		14·4		88·2		63		4		24·9
18	12 57·1		6 18·2		·5731		·4506		1 8·6	
		14·7		88·0		47		3		24·7
28	13 11·8		7 46·2		·5778		·4509		0 43·9	
		15·0		86·9		30		2		24·5
Oct. 8	13 26·8		9 13·1		·5808		·4511		20 0 19·4	
		15·1		85·2		+ 14		+ 2		26·6
18	13 41·9		10 38·3		·5822		·4513		23 52·8	
		15·3		82·8		— 4		0		24·1
28	13 57·2		12 1·1		·5818		·4513		23 28·7	
		15·5		79·5		21		0		23·9
Nov. 7	14 12·7		13 20·6		·5797		·4513		23 4·8	
		15·6		75·6		38		— 1		23·8
17	14 28·3		14 36·2		·5759		·4512		22 41·0	
		15·6		71·0		56		3		23·7
27	14 43·9		15 47·2		·5703		·4509		22 17·3	
		15·6		65·9		74		3		23·8
Dec. 7	14 59·5		16 53·1		·5629		·4506		21 53·5	
		15·5		60·2		92		4		23·9
17	15 15·0		17 53·3		·5537		·4502		21 29·6	
		15·4		54·0		110		5		24·1
27	15 30·4		18 47·3		·5427		·4497		21 5·5	
		+ 15·0		— 47·7		—129		— 5		—24·3
37	15 45·4		S. 19 35·0		0·5298		0·4492		20 41·2	

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Month and Day.	Right Ascension. Noon.	Δ_1	Declination. Noon.	Δ_1	Log. of Distance from the Earth. Noon.	Δ_1	Log. of Distance from the Sun. Noon.	Δ_1	Meridian Passage.	Δ_1
	h m	m	° ′	′					h m	m
Jan. 1	13 37·7	+12·5	S. 10 28·3	− 69·5	0·3780	−204	0·3665	+30	18 52·3	−27·0
11	13 50·2	11·1	11 37·8	59·1	·3576	220	·3695	29	18 25·3	28·4
21	14 1·3	9·3	12 36·9	47·9	·3356	233	·3724	30	17 56·9	30·2
31	14 10·6	7·3	13 24·8	35·7	·3123	243	·3754	29	17 26·7	32·3
Feb. 10	14 17·9	4·8	14 0·5	22·4	·2880	247	·3783	29	16 54·4	34·6
20	14 22·7	+ 2·1	14 22·9	− 8·4	·2633	243	·3812	29	16 19·8	37·4
Mar. 2	14 24·8	− 0·8	14 31·3	+ 6·5	·2390	226	·3841	28	15 42·4	40·4
12	14 24·0	3·8	14 24·8	21·7	·2164	194	·3869	28	15 2·0	43·3
22	14 20·2	6·5	14 3·1	35·9	·1970	145	·3897	27	14 18·7	45·9
Apr. 1	14 13·7	8·5	13 27·2	47·2	·1825	81	·3924	27	13 32·8	47·8
11	14 5·2	9·4	12 40·0	53·9	·1744	− 4	·3951	26	12 45·0	48·7
21	13 55·8	9·2	11 46·1	54·0	·1740	+ 74	·3977	25	11 56·3	48·5
May 1	13 46·6	8·0	10 52·1	47·7	·1814	146	·4002	25	11 7·8	47·1
11	13 38·6	5·8	10 4·4	36·1	·1960	204	·4027	24	10 20·7	45·0
21	13 32·8	3·3	9 28·3	21·3	·2164	244	·4051	24	9 35·7	42·5
31	13 29·5	− 0·7	9 7·0	+ 5·7	·2408	269	·4075	22	8 53·2	40·0
June 10	13 28·8	+ 1·7	9 1·3	− 9·2	·2677	280	·4097	23	8 13·2	37·4
20	13 30·5	4·1	9 10·5	22·6	·2957	281	·4120	21	7 35·8	35·3
30	13 34·6	6·0	9 33·1	34·0	·3238	274	·4141	20	7 0·5	33·2
July 10	13 40·6	7·8	10 7·1	43·3	·3512	263	·4161	20	6 27·3	31·5
20	13 48·4	9·3	10 50·4	50·7	·3775	249	·4181	19	5 55·8	30·1
30	13 57·7	10·6	11 41·1	56·1	·4024	233	·4200	18	5 25·7	28·8
Aug. 9	14 8·3	11·7	12 37·2	59·9	·4257	217	·4218	17	4 56·9	27·6
19	14 20·0	12·7	13 37·1	62·0	·4474	198	·4235	17	4 29·3	26·6
29	14 32·7	13·6	14 39·1	62·9	·4672	181	·4252	16	4 2·7	25·8
Sept. 8	14 46·3	14·4	15 42·0	62·3	·4853	164	·4268	14	3 36·9	25·0
18	15 0·7	15·1	16 44·3	60·5	·5017	146	·4282	14	3 11·9	24·2
28	15 15·8	15·7	17 44·8	57·7	·5163	128	·4296	14	2 47·7	23·7
Oct. 8	15 31·5	16·3	18 42·5	53·9	·5291	111	·4310	12	2 24·0	23·1
18	15 47·8	16·8	19 36·4	49·1	·5402	94	·4322	11	2 0·9	22·6
28	16 4·6	17·2	20 25·5	43·4	·5496	77	·4333	11	1 38·3	22·2
Nov. 7	16 21·8	17·5	21 8·9	37·0	·5573	60	·4344	9	1 16·1	21·9
17	16 39·3	17·8	21 45·9	30·2	·5633	42	·4353	9	0 54·2	21·6
27	16 57·1	18·0	22 16·1	22·6	·5675	26	·4362	8	0 32·6	21·4
Dec. 7	17 15·1	18·1	22 38·7	15·0	·5701	+ 8	·4370	7	0 11·2	23·4
17	17 33·2	18·1	22 53·7	− 7·0	·5709	− 9	·4377	6	23 47·8	21·3
27	17 51·3	+18·0	23 0·7	+ 0·8	·5700	− 26	·4383	+ 6	23 26·5	−21·4
37	18 9·3		S. 22 59·9		0·5674		0·4389		23 5·1	

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Month and Day.	Right Ascension. Noon.		Declination. Noon.		Log. of Distance from the Earth. Noon.		Log. of Distance from the Sun. Noon.		Meridian Passage.	
	h m	Δ_1 m	° ′	Δ_1 ′		Δ_1		Δ_1	h m	Δ_1 m
Jan. 1	11 37·0		N. 6 20·5		0·3718		0·4511		16 51·1	
		+ 2·3		+ 1·3		— 252		— 3		— 37·2
11	11 39·3		6 21·8		·3466		·4508		16 13·9	
		— 0·1		17·1		243		5		39·6
21	11 39·2		6 38·9		·3223		·4503		15 34·3	
		2·6		32·3		224		5		42·0
31	11 36·6		7 11·2		·2999		·4498		14 52·3	
		5·0		46·2		191		6		44·5
Feb. 10	11 31·6		7 57·4		·2808		·4492		14 7·8	
		7·2		56·6		140		7		46·5
20	11 24·4		8 54·0		·2668		·4485		13 21·3	
		8·6		61·0		79		9		48·0
Mar. 2	11 15·8		9 55·0		·2589		·4476		12 33·3	
		9·3		58·9		— 9		9		48·5
12	11 6·5		10 53·9		·2580		·4467		11 44·8	
		8·8		50·2		+ 60		10		48·1
22	10 57·7		11 44·1		·2640		·4457		10 56·7	
		7·5		36·6		121		11		46·7
Apr. 1	10 50·2		12 20·7		·2761		·4446		10 10·0	
		5·5		20·8		168		12		44·7
11	10 44·7		12 41·5		·2929		·4434		9 25·3	
		3·1		+ 4·2		200		12		42·2
21	10 41·6		12 45·7		·3129		·4422		8 43·1	
		— 0·5		— 11·5		219		14		39·8
May 1	10 41·1		12 34·2		·3348		·4408		8 3·3	
		+ 1·8		25·5		227		14		37·4
11	10 42·9		12 8·7		·3575		·4394		7 25·9	
		4·0		38·3		225		16		35·3
21	10 46·9		11 30·4		·3800		·4378		6 50·6	
		5·9		48·6		217		16		33·5
31	10 52·8		10 41·8		·4017		·4362		6 17·1	
		7·5		58·4		206		18		31·8
June 10	11 0·3		9 43·4		·4223		·4344		5 45·3	
		8·9		67·0		193		18		30·4
20	11 9·2		8 36·4		·4416		·4326		5 14·9	
		10·1		73·8		177		19		29·2
30	11 19·3		7 22·6		·4593		·4307		4 45·7	
		11·1		80·3		161		20		28·3
July 10	11 30·4		6 2·3		·4754		·4287		4 17·4	
		11·9		85·7		145		21		27·4
20	11 42·3		4 36·6		·4899		·4266		3 50·0	
		12·7		90·3		128		21		26·7
30	11 55·0		3 6·3		·5027		·4245		3 23·3	
		13·3		94·1		111		23		26·0
Aug. 9	12 8·3		N. 1 32·2		·5138		·4222		2 57·3	
		14·0		97·2		96		23		25·5
19	12 22·3		S. 0 5·0		·5234		·4199		2 31·8	
		14·4		99·5		79		24		24·9
29	12 36·7		1 44·5		·5313		·4175		2 6·9	
		15·0		101·0		63		25		24·4
Sept. 8	12 51·7		3 25·5		·5376		·4150		1 42·5	
		15·4		101·8		47		26		24·0
18	13 7·1		5 7·3		·5423		·4124		1 18·5	
		15·9		101·5		32		27		23·4
28	13 23·0		6 48·8		·5455		·4097		0 55·1	
		16·4		100·7		+ 16		27		23·0
Oct. 8	13 39·4		8 29·5		·5471		·4070		0 32·1	
		16·7		99·0		0		28		22·7
18	13 56·1		10 8·5		·5471		·4042		23 0 9·4	
		17·2		95·9		— 16		29		24·4
28	14 13·3		11 44·4		·5455		·4013		23 45·0	
		17·6		92·5		31		29		21·8
Nov. 7	14 30·9		13 16·9		·5424		·3984		23 23·2	
		18·0		88·0		47		30		21·3
17	14 48·9		14 44·9		·5377		·3954		23 1·9	
		18·4		82·6		63		31		21·0
27	15 7·3		16 7·5		·5314		·3923		22 40·9	
		18·7		76·4		79		31		20·7
Dec. 7	15 26·0		17 23·9		·5235		·3892		22 20·2	
		18·9		69·4		95		32		20·4
17	15 44·9		18 33·3		·5140		·3860		21 59·8	
		19·2		61·7		112		32		20·2
27	16 4·1		19 35·0		·5028		·3828		21 39·6	
37	16 23·5	+ 19·4	S. 20 28·7	— 53·7	0·4899	— 129	0·3795	— 33	21 19·6	— 20·0

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	h m	m	° ′	′					h m	m
Jan. 1	4 53·9		N.29 19·8		0·2366		0·4221		10 8·6	
		−6·7		+21·1		+185		+ 8		−46·0
11	4 47·2		29 40·9		·2551		·4229		9 22·6	
		3·8		17·1		226		9		42·9
21	4 43·4		29 58·0		·2777		·4238		8 39·7	
		−0·4		15·7		250		10		39·7
31	4 43·0		30 13·7		·3027		·4248		8 0·0	
		+ 2·6		15·7		261		10		36·6
Feb. 10	4 45·6		30 29·4		·3288		·4258		7 23·4	
		5·4		16·3		262		11		33·8
20	4 51·0		30 45·7		·3550		·4269		6 49·6	
		8·0		16·6		255		11		31·3
Mar. 2	4 59·0		31 2·3		·3805		·4280		6 18·3	
		10·1		16·0		245		12		29·2
12	5 9·1		31 18·3		·4050		·4292		5 49·1	
		12·0		14·4		230		12		27·4
22	5 21·1		31 32·7		·4280		·4304		5 21·7	
		13·5		11·7		214		12		25·9
Apr. 1	5 34·6		31 44·4		·4494		·4316		4 55·8	
		14·7		7·7		197		13		24·6
11	5 49·3		31 52·1		·4691		·4329		4 31·2	
		15·8		+ 2·9		181		13		23·5
21	6 5·1		31 55·0		·4872		·4342		4 7·7	
		16·7		− 2·8		163		14		22·8
May 1	6 21·8		31 52·2		·5035		·4356		3 44·9	
		17·3		9·2		147		14		22·1
11	6 39·1		31 43·0		·5182		·4370		3 22·8	
		17·7		16·0		131		14		21·6
21	6 56·8		31 27·0		·5313		·4384		3 1·2	
		18·1		23·1		115		14		21·3
31	7 14·9		31 3·9		·5428		·4398		2 39·9	
		18·4		30·2		100		15		21·1
June 10	7 33·3		30 33·7		·5528		·4413		2 18·8	
		18·3		37·1		84		15		21·0
20	7 51·6		29 56·6		·5612		·4428		1 57·8	
		18·4		43·9		70		15		21·0
30	8 10·0		29 12·7		·5682		·4443		1 36·8	
July 10	8 28·3	18·3	28 22·5	50·2	·5737	55	·4458	15	1 15·7	21·1
		18·1		55·8		40		16		21·3
20	8 46·4		27 26·7		·5777		·4474		0 54·4	
		17·8		61·0		+ 27		15		21·6
30	9 4·2		26 25·7		·5804		·4489		0 32·8	
		17·6		65·3		12		16		21·8
Aug. 9	9 21·8		25 20·4		·5816		·4505		23 11·0	
		17·3		68·8		− 2		15		24·3
19	9 39·1		24 11·6		·5814		·4520		23 46·7	
		16·9		71·3		17		16		22·5
29	9 56·0		23 0·3		·5797		·4536		23 24·2	
		16·5		73·0		32		16		22·9
Sept. 8	10 12·5		21 47·3		·5765		·4552		23 1·3	
		16·2		73·5		47		15		23·3
18	10 28·7		20 33·8		·5718		·4567		22 38·0	
		15·7		73·0		61		16		23·7
28	10 44·4		19 20·8		·5657		·4583		22 14·3	
		15·2		71·3		77		15		24·2
Oct. 8	10 59·6		18 9·5		·5580		·4598		21 50·1	
		14·7		68·3		93		16		24·8
18	11 14·3		17 1·2		·5487		·4614		21 25·3	
		14·1		64·2		109		15		25·3
28	11 28·4		15 57·0		·5378		·4629		21 0·0	
		13·4		58·6		125		16		26·0
Nov. 7	11 41·8		14 58·4		·5253		·4645		20 34·0	
		12·7		51·7		141		15		26·8
17	11 54·5		14 6·7		·5112		·4660		20 7·2	
		11·8		43·4		157		15		27·6
27	12 6·3		13 23·3		·4955		·4675		19 39·6	
		10·8		33·6		171		15		28·7
Dec. 7	12 17·1		12 49·7		·4784		·4690		19 10·9	
		9·6		22·4		185		15		29·8
17	12 26·7		12 27·3		·4599		·4705		18 41·1	
		8·3		− 10·0		196		15		31·2
27	12 35·0		12 17·3		·4403		·4720		18 9·9	
		+ 6·6		+ 3·5		−204		+14		−32·9
37	12 41·6		N.12 20·8		0·4199		0·4734		17 37·0	

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MEAN TIME AT GREENWICH.

Month and Day.	Right Ascension. Noon.	Δ_2	Declination. Noon.	Δ_2	Log. of Distance from the Earth. Noon.	Δ_2	Log. of Distance from the Sun. Noon.	Δ_1	Meridian Passage.	Δ_2
	h m	m	° ′	′					h m	m
Jan. 1	13 15·5	+12·7	N. 3 43·3	−45·2	0·2969	−220	0·3291	+36	18 30·1	−26·8
11	13 28·2	10·8	2 58·1	29·8	·2749	230	·3327	39	18 3·3	28·7
21	13 39·0	8·6	2 28·3	15·2	·2519	236	·3366	40	17 34·6	31·0
31	13 47·6	5·9	2 13·1	− 0·1	·2283	237	·3406	41	17 3·6	33·6
Feb. 10	13 53·5	+ 3·0	2 13·0	+ 14·2	·2046	227	·3447	42	16 30·0	36·5
20	13 56·5	− 0·3	2 27·2	26·5	·1819	204	·3489	43	15 53·5	39·8
Mar. 2	13 56·2	3·5	2 53·7	35·0	·1615	166	·3532	44	15 13·7	43·0
12	13 52·7	6·4	3 28·7	37·8	·1449	110	·3576	44	14 30·7	45·9
22	13 46·3	8·7	4 6·5	33·3	·1339	− 37	·3620	45	13 44·8	48·0
Apr. 1	13 37·6	9·7	4 39·8	22·2	·1302	+ 43	·3665	45	12 56·8	49·0
11	13 27·9	9·5	5 2·0	5·6	·1345	123	·3710	45	12 7·8	48·8
21	13 18·4	8·3	5 7·6	− 13·6	·1468	192	·3755	45	11 19·0	47·4
May 1	13 10·1	6·0	4 54·0	32·8	·1660	247	·3800	46	10 31·6	45·2
11	13 4·1	3·5	4 21·2	49·5	·1907	281	·3846	44	9 46·4	42·7
21	13 0·6	− 0·8	3 31·7	63·3	·2188	302	·3890	45	9 3·7	40·0
31	12 59·8	+ 1·7	2 28·4	74·2	·2490	310	·3935	44	8 23·7	37·6
June 10	13 1·5	3·9	N. 1 14·2	82·4	·2800	307	·3979	43	7 46·1	35·4
20	13 5·4	5·8	S. 0 8·2	88·3	·3107	298	·4022	43	7 10·7	33·4
30	13 11·2	7·5	1 36·5	92·4	·3405	287	·4065	43	6 37·3	31·8
July 10	13 18·7	8·9	3 8·9	95·0	·3692	271	·4108	41	6 5·5	30·5
20	13 27·6	10·1	4 43·9	96·4	·3963	254	·4149	41	5 35·0	29·2
30	13 37·7	11·2	6 20·3	96·8	·4217	237	·4190	41	5 5·8	28·2
Aug. 9	13 48·9	12·0	7 57·1	96·2	·4454	218	·4231	39	4 37·6	27·3
19	14 0·9	12·8	9 33·3	94·7	·4672	201	·4270	39	4 10·3	26·6
29	14 13·7	13·5	11 8·0	92·6	·4873	183	·4309	38	3 43·7	25·9
Sept. 8	14 27·2	14·1	12 40·6	89·6	·5056	165	·4347	37	3 17·8	25·3
18	14 41·3	14·7	14 10·2	86·1	·5221	148	·4384	36	2 52·5	24·7
28	14 56·0	15·1	15 36·3	81·8	·5369	129	·4420	35	2 27·8	24·2
Oct. 8	15 11·1	15·6	16 58·1	77·0	·5498	113	·4455	35	2 3·6	23·8
18	15 26·7	15·9	18 15·1	71·6	·5611	94	·4490	33	1 39·8	23·5
28	15 42·6	16·2	19 26·7	65·8	·5705	78	·4523	32	1 16·3	23·1
Nov. 7	15 58·8	16·5	20 32·5	59·6	·5783	60	·4555	32	0 53·2	22·9
17	16 15·3	16·6	21 32·1	53·1	·5843	42	·4587	30	0 30·3	22·8
27	16 31·9	16·8	22 25·2	46·5	·5885	25	·4617	30	0 7·5	24·9
Dec. 7	16 48·7	16·7	23 11·7	39·7	·5910	+ 7	·4647	28	23 42·6	22·7
17	17 5·4	16·7	23 51·4	33·2	·5917	− 10	·4675	28	23 19·9	22·7
27	17 22·1	+16·5	24 24·6	−26·7	·5907	− 28	·4703	+26	22 57·2	−22·9
37	17 38·6		S. 24 51·3		0·5879		0·4729		22 34·3	

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Month and Day.	Right Ascension. Noon.	Δ_1	Declination. Noon.	Δ_1	Log. of Distance from the Earth. Noon.	Δ_1	Log. of Distance from the Sun. Noon.	Δ_1	Meridian Passage.	Δ_1
	h m	m	° ′	′					h m	m
Jan. 1	7 13·6		N.23 33·2		0·2668		0·4515		12 27·7	
		9·1		+15·9		−14		−10		−48·3
11	7 4·5		23 49·1		·2654		·4505		11 39·4	
		8·6		12·2		+54		9		47·8
21	6 55·9		24 1·3		·2708		·4496		10 51·6	
		7·1		7·6		115		8		46·3
31	6 48·8		24 8·9		·2823		·4488		10 5·3	
		4·8		+ 3·2		166		8		44·1
Feb. 10	6 44·0		24 12·1		·2989		·4480		9 21·2	
		−2·1		−0·4		196		7		41·3
20	6 41·9		24 11·7		·3185		·4473		8 39·9	
		+0·6		3·6		220		7		38·6
Mar. 2	6 42·5		24 8·1		·3405		·4466		8 1·3	
		3·3		6·6		229		6		35·9
12	6 45·8		24 1·5		·3634		·4460		7 25·4	
		5·8		9·5		230		5		33·5
22	6 51·6		23 52·0		·3864		·4455		6 51·9	
		7·9		13·2		225		5		31·4
Apr. 1	6 59·5		23 38·8		·4089		·4450		6 20·5	
		9·7		17·4		215		4		29·7
11	7 9·2		23 21·4		·4304		·4446		5 50·8	
		11·2		22·3		203		3		28·1
21	7 20·4		22 59·1		·4507		·4443		5 22·7	
		12·4		27·8		188		3		26·9
May 1	7 32·8		22 31·3		·4695		·4440		4 55·8	
		13·5		33·7		174		2		25·9
11	7 46·3		21 57·6		·4869		·4438		4 29·9	
		14·2		40·1		158		1		25·2
21	8 0·5		21 17·5		·5027		·4437		4 4·7	
		14·8		46·5		143		−1		24·5
31	8 15·3		20 31·0		·5170		·4436		3 40·2	
		15·3		53·1		128		0		24·1
June 10	8 30·6		19 37·9		·5298		·4436		3 16·1	
		15·6		59·6		113		+1		23·8
20	8 46·2		18 38·3		·5411		·4437		2 52·3	
		15·9		65·7		99		2		23·5
30	9 2·1		17 32·6		·5510		·4439		2 28·8	
		16·0		71·7		83		2		23·4
July 10	9 18·1		16 20·9		·5593		·4441		2 5·4	
		16·0		77·1		70		3		23·3
20	9 34·1		15 3·8		·5663		·4444		1 42·1	
		16·1		82·2		55		3		23·4
30	9 50·2		13 41·6		·5718		·4447		1 18·7	
		16·0		86·6		42		4		23·3
Aug. 9	10 6·2		12 15·0		·5760		·4451		0 55·4	
		16·0		90·2		27		5		23·5
19	10 22·2		10 44·8		·5787		·4456		0 31·9	
		15·8		93·5		+13		6		23·5
29	10 38·0		9 11·3		·5800		·4462		0 8·4	
		15·7		95·7		0		6		26·0
Sept. 8	10 53·7		7 35·6		·5800		·4468		23 42·4	
		15·6		97·4		−15		7		23·9
18	11 9·3		5 58·2		·5785		·4475		23 18·5	
		15·3		98·2		30		7		24·0
28	11 24·6		4 20·0		·5755		·4482		22 54·5	
		15·2		98·4		44		8		24·2
Oct. 8	11 39·8		2 41·6		·5711		·4490		22 30·3	
		14·9		97·5		60		9		24·5
18	11 54·7		N. 1 4·1		·5651		·4499		22 5·8	
		14·7		95·8		75		9		24·8
28	12 9·4		S. 0 31·7		·5576		·4508		21 41·0	
		14·3		93·4		91		10		25·1
Nov. 7	12 23·7		2 5·1		·5485		·4518		21 15·9	
		13·9		89·9		107		10		25·5
17	12 37·6		3 35·0		·5378		·4528		20 50·4	
		13·4		85·7		123		11		26·0
27	12 51·0		5 0·7		·5255		·4539		20 24·4	
		12·9		80·6		140		11		26·6
Dec. 7	13 3·9		6 21·3		·5115		·4550		19 57·8	
		12·1		74·5		155		12		27·3
17	13 16·0		7 35·8		·4960		·4562		19 30·5	
		11·3		67·6		172		12		28·2
27	13 27·3		8 43·4		·4788		·4574		19 2·3	
		+10·2		−60·0		−186		+12		−29·2
37	13 37·5		S. 9 43·4		0·4602		0·4586		18 33·1	

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Month and Day.	Right Ascension. Noon.		Declination. Noon.		Log. of Distance from the Earth. Noon.		Log. of Distance from the Sun. Noon.		Meridian Passage.	
	h m	Δ₁ m	° ′	Δ₁ ′		Δ₁		Δ₁	h m	Δ₁ m
Jan. 1	22 34·4	+21·5	N. 0 52·2	+46·1	0·3629	+220	0·3024	+55	3 50·7	−17·9
11	22 55·9	21·3	1 38·3	55·2	·3849	206	·3079	57	3 32·8	18·1
21	23 17·2	21·1	2 33·5	62·1	·4055	190	·3136	57	3 14·7	18·3
31	23 38·3		3 35·6		·4245		·3193		2 56·4	
		20·8		66·9		175		58		18·6
Feb. 10	23 59·1	20·6	4 42·5	69·9	·4420	160	·3251	57	2 37·8	18·8
20	0 19·7	20·3	5 52·4	71·2	·4580	143	·3308	58	2 19·0	19·1
Mar. 2	0 40·0	20·2	7 3·6	70·7	·4723	128	·3366	57	1 59·9	19·2
12	1 0·2		8 14·3		·4851		·3423		1 40·7	
		19·9		69·1		112		57		19·5
22	1 20·1	19·8	9 23·4	65·9	·4963	96	·3480	56	1 21·2	19·6
Apr. 1	1 39·9	19·6	10 29·3	61·5	·5059	80	·3536	55	1 1·6	19·8
11	1 59·5	19·4	11 30·8	56·3	·5139	64	·3591	55	0 41·8	20·0
21	2 18·9		12 27·1		·5203		·3646		0 21·8	
		19·2		50·0		49		53		20·2
May 1	2 38·1	19·1	13 17·1	42·9	·5252	33	·3699	53	{0 1·6 / 23 59·8}	20·4
11	2 57·2	18·8	14 0·0	35·1	·5285	18	·3752	51	23 39·2	20·6
21	3 16·0	18·5	14 35·1	26·7	·5303	+1	·3803	50	23 18·6	20·9
31	3 34·5		15 1·8		·5304		·3853		22 57·7	
		18·2		17·8		−13		49		21·2
June 10	3 52·7	17·9	15 19·6	+8·4	·5291	30	·3902	48	22 36·5	21·6
20	4 10·6	17·4	15 28·0	−1·2	·5261	45	·3950	46	22 14·9	22·0
30	4 28·0	16·8	15 26·8	11·0	·5216	61	·3996	45	21 52·9	22·6
July 10	4 44·8		15 15·8		·5155		·4041		21 30·3	
		16·3		21·0		78		44		23·2
20	5 1·1	15·5	14 54·8	31·0	·5077	94	·4085	42	21 7·1	23·9
30	5 16·6	14·6	14 23·8	40·9	·4983	111	·4127	41	20 43·2	24·8
Aug. 9	5 31·2	13·7	13 42·9	50·6	·4872	127	·4168	39	20 18·4	25·8
19	5 44·9		12 52·3		·4745		·4207		19 52·6	
		12·6		60·2		143		39		27·0
29	5 57·5	11·2	11 52·1	69·3	·4602	158	·4246	36	19 25·6	28·2
Sept. 8	6 8·7	9·7	10 42·8	77·9	·4444	173	·4282	36	18 57·4	29·8
18	6 18·4	8·0	9 24·9	85·6	·4271	185	·4318	34	18 27·6	31·5
28	6 26·4		7 59·3		·4086		·4352		17 56·1	
		6·1		92·4		194		32		33·4
Oct. 8	6 32·5	3·8	6 26·9	97·6	·3892	198	·4384	32	17 22·7	35·7
18	6 36·3	+1·4	4 49·3	100·5	·3694	195	·4416	30	16 47·0	38·1
28	6 37·7	−1·3	3 8·8	100·3	·3499	184	·4446	28	16 8·9	40·7
Nov. 7	6 36·4		N. 1 28·5		·3315		·4474		15 28·2	
		3·9		95·7		161		28		43·4
17	6 32·5	6·4	S. 0 7·2	86·0	·3154	127	·4502	26	14 44·8	45·8
27	6 26·1	8·4	1 33·2	70·9	·3027	79	·4528	24	13 59·0	47·8
Dec. 7	6 17·7	9·8	2 44·1	50·4	·2948	−23	·4552	24	13 11·2	49·1
17	6 7·9		3 34·5		·2925		·4576		12 22·1	
		10·1		27·0		+37		22		49·4
27	5 57·8	−9·5	4 1·5	−2·7	·2962	+95	·4598	+20	11 32·7	−48·7
37	5 48·3		S. 4 4·2		0·3057		0·4618		10 44·0	

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Month and Day.	Right Ascension. Noon.		Declination. Noon.		Log. of Distance from the Earth. Noon.		Log. of Distance from the Sun. Noon.		Meridian Passage.	
	h m	Δ_1 m	° ′	Δ_1 ′		Δ_1		Δ_1	h m	Δ_1 m
Jan. 1	17 7·3	+20·6	S. 23 56·7	−28·8	0·5191	− 70	0·3855	+ 5	22 22·2	−18·8
11	17 27·9	20·4	24 25·5	18·9	·5121	85	·3860	5	22 3·4	19·0
21	17 48·3	20·1	24 44·4	9·6	·5036	99	·3865	5	21 44·4	19·4
31	18 8·4		24 54·0		·4937		·3870		21 25·0	
		19·7		− 0·9		115		7		19·7
Feb. 10	18 28·1		24 54·9	+ 6·9	·4822	131	·3877	7	21 5·3	
20	18 47·2	19·1	24 48·0	13·6	·4691	146	·3884	8	20 44·9	20·4
Mar. 2	19 5·5	18·3	24 34·4	18·9	·4545	161	·3892	9	20 23·7	21·2
12	19 22·9	17·4	24 15·5		·4384		·3901		20 1·7	22·0
		16·5		22·5		177		9		23·1
22	19 39·4		23 53·0		·4207	192	·3910	9	19 38·6	
Apr. 1	19 54·6	15·2	23 28·5	24·5	·4015	207	·3919	11	19 14·4	24·2
11	20 8·5	13·9	23 3·9	24·6	·3808	220	·3930	10	18 48·8	25·6
21	20 20·9	12·4	22 41·5	22·4	·3588		·3940		18 21·7	27·1
		10·7		18·2		232		12		28·8
May 1	20 31·6		22 23·3		·3356	241	·3952	12	17 52·9	
11	20 40·2	8·6	22 11·5	11·8	·3115	245	·3964	12	17 22·0	30·9
21	20 46·6	6·4	22 8·1	+ 3·4	·2870	242	·3976	13	16 48·9	33·1
31	20 50·5	3·9	22 14·7	− 6·6	·2628		·3989		16 13·3	35·6
		+ 1·2		17·5		230		13		38·4
June 10	20 51·7	− 1·7	22 32·2	28·1	·2398	206	·4002	13	15 34·9	41·2
20	20 50·0	4·6	23 0·3	36·4	·2192	167	·4015	14	14 53·7	44·0
30	20 45·4	7·0	23 36·7	41·1	·2025	114	·4029	14	14 9·7	46·4
July 10	20 38·4		24 17·8		·1911		·4043		13 23·3	
		8·8		40·2		− 47		14		48·1
20	20 29·6		24 58·0		·1864		·4057		12 35·2	
30	20 20·1	9·5	25 32·1	34·1	·1889	+ 25	·4072	15	11 46·4	48·8
Aug. 9	20 11·1	9·0	25 56·1	24·0	·1987	98	·4087	15	10 58·2	48·2
19	20 3·7	7·4	26 8·1	12·0	·2148	161	·4102	15	10 11·6	46·6
		4·9		− 0·2		210		15		44·1
29	19 58·8	− 2·2	26 8·3	+10·3	·2358	245	·4117	15	9 27·5	
Sept. 8	19 56·6	+ 0·7	25 58·0	19·1	·2603	265	·4132	15	8 46·1	41·4
18	19 57·3	3·5	25 38·9	26·8	·2868	273	·4147	15	8 7·6	38·5
28	20 0·8		25 12·1		·3141		·4162		7 31·8	35·8
		5·9		33·5		273		16		33·4
Oct. 8	20 6·7	8·0	24 38·6	40·0	·3414	266	·4178	15	6 58·4	31·2
18	20 14·7	9·8	23 58·6	46·1	·3680	255	·4193	15	6 27·2	29·6
28	20 24·5	11·2	23 12·5	52·3	·3935	241	·4208	16	5 57·6	28·1
Nov. 7	20 35·7		22 20·2		·4176		·4224		5 29·5	
		12·4		58·6		224		15		27·0
17	20 48·1		21 21·6		·4400	208	·4239		5 2·5	
27	21 1·4	13·3	20 16·9	64·7	·4608	190	·4254	15	4 36·5	26·0
Dec. 7	21 15·4	14·0	19 6·1	70·8	·4798	173	·4269	15	4 11·2	25·3
17	21 30·0	14·6	17 49·6	76·5	·4971		·4283	14	3 46·4	24·8
		15·0		81·9		154		15		24·5
27	21 45·0		16 27·7		·5125		·4298		3 21·9	
37	22 0·3	+15·3	S. 15 0·9	+86·8	0·5262	+137	0·4312	+14	2 57·8	−24·1

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	h m	Δ₁ m	° ′	Δ₁ ′		Δ₁		Δ₁	h m	Δ₁ m
Jan. 1	10 4·1		N. 13 25·6		0·0826		0·3030		15 18·2	
		— 1·9		+ 25·5		— 232		+ 28		— 41·4
11	10 2·2		13 51·1		·0594		·3058		14 36·8	
		5·4		43·3		174		30		44·9
21	9 56·8		14 34·4		·0420		·3088		13 51·9	
		8·2		55·2		— 92		31		47·6
31	9 48·6		15 29·6		·0328		·3119		13 4·3	
		9·8		58·4		+ 5		33		49·1
Feb. 10	9 38·8		16 28·0		·0333		·3152		12 15·2	
		9·7		52·2		106		35		48·9
20	9 29·1		17 20·2		·0439		·3187		11 26·3	
		8·1		38·7		196		35		47·3
Mar. 2	9 21·0		17 58·9		·0635		·3222		10 39·0	
		5·3		21·8		265		36		44·3
12	9 15·8		18 20·7		·0900		·3258		9 54·7	
		— 1·9		+ 4·4		310		37		41·1
22	9 13·9		18 25·1		·1210		·3295		9 13·6	
		+ 1·4		— 11·9		333		37		37·8
Apr. 1	9 15·3		18 13·2		·1543		·3332		8 35·8	
		4·4		26·1		341		38		34·8
11	9 19·7		17 47·1		·1884		·3370		8 1 0	
		7·1		38·9		337		38		32·3
21	9 26·8		17 8·2		·2221		·3408		7 28·7	
		9·1		50·1		326		38		30·1
May 1	9 35·9		16 18·1		·2547		·3446		6 58·6	
		10·9		59·9		311		38		28·5
11	9 46·8		15 18·2		·2858		·3484		6 30·1	
		12·1		68·9		294		38		27·2
21	9 58·9		14 9·3		·3152		·3522		6 2·9	
		13·2		76·7		275		38		26·2
31	10 12·1		12 52·6		·3427		·3560		5 36·7	
		14·0		83·7		257		38		25·4
June 10	10 26·1		11 28·9		·3684		·3598		5 11·3	
		14·5		89·7		238		37		24·8
20	10 40·6		9 59·2		·3922		·3635		4 46·5	
		15·0		94·9		219		36		24·4
30	10 55·6		8 24·3		·4141		·3671		4 22·1	
		15·4		99·2		202		36		24·0
July 10	11 11·0		6 45·1		·4343		·3707		3 58·1	
		15·6		102·7		185		36		23·7
20	11 26·6		5 2·4		·4528		·3743		3 34·4	
		15·9		105·3		168		35		23·6
30	11 42·5		3 17·1		·4696		·3778		3 10·8	
		16·0		107·1		151		34		23·3
Aug. 9	11 58·5		N. 1 30·0		·4847		·3812		2 47·5	
		16·2		108·1		135		33		23·2
19	12 14·7		S. 0 18·1		·4982		·3845		2 24·3	
		16·4		108·3		119		33		23·0
29	12 31·1		2 6·4		·5101		·3878		2 1·3	
		16·5		107·6		104		32		22·9
Sept. 8	12 47·6		3 54·0		·5205		·3910		1 38·4	
		16·6		106·3		88		31		22·8
18	13 4·2		5 40·3		·5293		·3941		1 15·6	
		16·8		104·0		72		30		22·6
28	13 21·0		7 24·3		·5365		·3971		0 53·0	
		16·9		101·1		56		29		22·5
Oct. 8	13 37·9		9 5·4		·5421		·4000		0 30·5	
		17·0		97·5		41		28		22·3
18	13 54·9		10 42·9		·5462		·4028		0 8·2	
		17·1		92·9		24		27	11	24·5
28	14 12·0		12 15·8		·5486		·4055		23 43·7	
		17·2		87·9		+ 8		27		22·2
Nov. 7	14 29·2		13 43·7		·5494		·4082		23 21·5	
		17·3		82·1		— 8		25		22·1
17	14 46·5		15 5·8		·5486		·4107		22 59·4	
		17·3		75·9		25		24		22·1
27	15 3·8		16 21·7		·5461		·4131		22 37·3	
		17·2		69·0		42		23		22·3
Dec. 7	15 21·0		17 30·7		·5419		·4154		22 15·0	
		17·1		61·8		59		22		22·3
17	15 38·1		18 32·5		·5360		·4176		21 52·7	
		16·8		54·4		77		22		22·6
27	15 54·9		19 26·9		·5283		·4198		21 30·1	
		+ 16·5		— 46·8		— 95		+ 20		— 22·8
37	16 11·4		S. 20 13·7		0·5188		0·4218		21 7·3	

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Month and Day.	Right Ascension. Noon.	Δ₁	Declination. Noon.	Δ₁	Log. of Distance from the Earth. Noon.	Δ₁	Log. of Distance from the Sun. Noon.	Δ₁	Meridian Passage.	Δ₂
	h m	m	° ′	′					h m	m
Jan. 1	5 29·1	7·1	N. 10 32·2	+44·5	0·1641	+127	0·3798	−16	10 43·6	−46·3
11	5 22·0	4·6	11 16·7	54·1	·1768	176	·3782	14	9 57·3	43·8
21	5 17·4	1·6	12 10·8	60·5	·1944	221	·3768	13	9 13·5	40·8
31	5 15·8	+ 1·6	13 11·3	63·5	·2165	246	·3755	11	8 32·7	37·6
Feb. 10	5 17·4	4·5	14 14·8	63·6	·2411	257	·3744	10	7 55·1	34·7
20	5 21·9	7·3	15 18·4	61·1	·2668	256	·3734	9	7 20·4	32·0
Mar. 2	5 29·2	9·7	16 19·5	56·7	·2924	251	·3725	7	6 48·4	29·6
12	5 38·9	11·8	17 16·2	50·4	·3175	241	·3718	6	6 18·8	27·5
22	5 50·7	13·5	18 6·6	42·6	·3416	227	·3712	5	5 51·3	25·9
Apr. 1	6 4·2	15·0	18 49·2	33·9	·3643	212	·3707	3	5 25·4	24·3
11	6 19·2	16·2	19 23·1	24·0	·3855	198	·3704	−1	5 1·1	23·2
21	6 35·4	17·2	19 47·1	13·7	·4053	182	·3703	+ 1	4 37·9	22·1
May 1	6 52·6	18·0	20 0·8	+ 2·9	·4235	167	·3704	1	4 15·8	21·5
11	7 10·6	18·5	20 3·7	− 8·0	·4402	152	·3705	4	3 54·3	20·8
21	7 29·1	19·0	19 55·7	18·9	·4554	137	·3709	4	3 33·5	20·4
31	7 48·1	19·3	19 36·8	29·6	·4691	124	·3713	7	3 13·1	20·2
June 10	8 7·4	19·4	19 7·2	39·9	·4815	110	·3720	8	2 52·9	19·9
20	8 26·8	19·5	18 27·3	49·4	·4925	97	·3728	9	2 33·0	20·0
30	8 46·3	19·4	17 37·9	58·4	·5022	84	·3737	11	2 13·0	19·9
July 10	9 5·7	19·4	16 39·5	66·5	·5106	72	·3748	12	1 53·1	20·0
20	9 25·1	19·3	15 33·0	73·6	·5178	58	·3760	13	1 33·1	20·1
30	9 44·4	19·1	14 19·4	79·9	·5236	47	·3773	14	1 13·0	20·4
Aug. 9	10 3·5	18·8	12 59·5	84·9	·5283	33	·3787	16	0 52·6	20·5
19	10 22·3	18·7	11 34·6	89·0	·5316	21	·3803	17	0 32·1	20·7
29	10 41·0	18·5	10 5·6	92·0	·5337	+ 9	·3820	18	0 11·4	23·1
Sept. 8	10 59·5	18·2	8 33·6	93·8	·5346	− 5	·3838	19	23 48·3	21·1
18	11 17·7	18·0	6 59·8	94·4	·5341	18	·3857	20	23 27·2	21·4
28	11 35·7	17·8	5 25·4	93·9	·5323	31	·3877	20	23 5·8	21·7
Oct. 8	11 53·5	17·5	3 51·5	92·3	·5292	46	·3897	22	22 44·1	21·9
18	12 11·0	17·3	2 19·2	89·4	·5246	59	·3919	22	22 22·2	22·1
28	12 28·3	16·9	N. 0 49·8	85·4	·5187	75	·3941	23	22 0·1	22·5
Nov. 7	12 45·2	16·6	S. 0 35·6	80·1	·5112	90	·3964	24	21 37·6	22·8
17	13 1·8	16·2	1 55·7	73·8	·5022	106	·3988	24	21 14·8	23·3
27	13 18·0	15·7	3 9·5	66·4	·4916	121	·4012	24	20 51·5	23·7
Dec. 7	13 33·7	15·1	4 15·9	57·7	·4795	138	·4036	25	20 27·8	24·3
17	13 48·8	14·4	5 13·6	48·2	·4657	154	·4061	26	20 3·5	25·1
27	14 3·2	+13·5	6 1·8	−37·7	·4503	−170	·4087	+25	19 38·4	−25·9
37	14 16·7		S. 6 39·5		0·4333		0·4112		19 12·5	

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Month and Day.	Right Ascension. Noon.		Declination. Noon.		Log. of Distance from the Earth. Noon.		Log. of Distance from the Sun. Noon.		Meridian Passage.	
	h m	Δ_1 m	° ′	Δ_1 ′		Δ_1		Δ_1	h m	Δ_2 m
Jan. 1	12 37·0	+ 6·7	S. 2 51·3	− 57·1	0·3792	− 238	0·4164	+ 12	17 51·3	− 32·8
11	12 43·7	4·7	3 48·4	45·9	·3554	247	·4176	12	17 18·5	34·8
21	12 48·4	+ 2·4	4 34·3	33·5	·3307	248	·4188	12	16 43·7	37·1
31	12 50·8	− 0·1	5 7·8	19·8	·3059	239	·4200	11	16 6·6	39·6
Feb. 10	12 50·7	2·8	5 27·6	− 5·2	·2820	218	·4211	11	15 27·0	42·3
20	12 47·9	5·3	5 32·8	+ 9·1	·2602	182	·4222	10	14 44·7	44·7
Mar. 2	12 42·6	7·5	5 23·7	22·0	·2420	130	·4232	11	14 0·0	46·9
12	12 35·1	9·0	5 1·7	31·7	·2290	− 65	·4243	10	13 13·1	48·3
22	12 26·1	9·4	4 30·0	36·4	·2225	+ 9	·4253	10	12 24·8	48·6
Apr. 1	12 16·7	8·8	3 53·6	35·4	·2234	80	·4263	9	11 36·2	48·0
11	12 7·9	7·2	3 18·2	29·0	·2314	143	·4272	9	10 48·2	46·5
21	12 0·7	5·1	2 49·2	18·5	·2457	193	·4281	9	10 1·7	44·2
May 1	11 55·6	2·6	2 30·7	+ 5·8	·2650	226	·4290	8	9 17·5	41·8
11	11 53·0	− 0·1	2 24·9	− 7·7	·2876	245	·4298	8	8 35·7	39·4
21	11 52·9	+ 2·2	2 32·6	20·8	·3121	253	·4306	8	7 56·3	37·0
31	11 55·1	4·4	2 53·4	32·9	·3374	252	·4314	7	7 19·3	35·0
June 10	11 59·5	6·1	3 26·3	43·8	·3626	245	·4321	7	6 44·3	33·1
20	12 5·6	7·8	4 10·1	53·2	·3871	234	·4328	6	6 11·2	31·6
30	12 13·4	9·1	5 3·3	61·2	·4105	220	·4334	6	5 39·6	30·2
July 10	12 22·5	10·3	6 4·5	68·1	·4325	204	·4340	5	5 9·4	29·0
20	12 32·8	11·3	7 12·6	73·6	·4529	189	·4345	5	4 40·4	28·1
30	12 44·1	12·2	8 26·2	78·1	·4718	172	·4350	5	4 12·3	27·2
Aug. 9	12 56·3	12·9	9 44·3	81·4	·4890	156	·4355	4	3 45·1	26·4
19	13 9·2	13·7	11 5·7	83·6	·5046	139	·4359	4	3 18·7	25·7
29	13 22·9	14·3	12 29·3	84·9	·5185	123	·4363	3	2 53·0	25·1
Sept. 8	13 37·2	14·8	13 54·2	85·2	·5308	106	·4366	3	2 27·9	24·5
18	13 52·0	15·4	15 19·4	84·6	·5414	90	·4369	3	2 3·4	24·0
28	14 7·4	15·9	16 44·0	83·0	·5504	73	·4372	2	1 39·4	23·5
Oct. 8	14 23·3	16·4	18 7·0	80·6	·5577	58	·4374	1	1 15·9	23·0
18	14 39·7	16·8	19 27·6	77·3	·5635	41	·4375	1	0 52·9	22·6
28	14 56·5	17·2	20 44·9	73·2	·5676	26	·4376	+ 1	0 30·3	22·1
Nov. 7	15 13·7	17·6	21 58·1	68·3	·5702	+ 9	·4377	0	0 8·2	24·0
17	15 31·3	17·8	23 6·4	62·8	·5711	− 8	·4377	0	23 44·2	21·6
27	15 49·1	18·1	24 9·2	56·7	·5703	23	·4377	− 1	23 22·6	21·3
Dec. 7	16 7·2	18·2	25 5·9	50·2	·5680	41	·4376	1	23 1·3	21·2
17	16 25·4	18·3	25 56·1	43·3	·5639	57	·4375	2	22 40·1	21·1
27	16 43·7	+ 18·2	26 39·4	− 36·3	·5582	− 74	·4373	− 2	22 19·0	− 21·2
37	17 1·9		S. 27 15·7		0·5508		0·4371		21 57·8	

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	h m	m	° ′	′					h m	m
Jan. 1	19 13·6	+20·7	S. 22 52·0	+ 45·5	0·5268	— 8	0·3781	—26	0 30·2	—18·7
11	19 34·3	20·7	22 6·5	55·4	·5260	23	·3755	26	,0 11·5	20·6
21	19 55·0	20·5	21 11·1	65·0	·5237	37	·3729	26	23 50·9	19·0
31	20 15·5		20 6·1		·5200		·3703		23 31·9	
		20·3		74·0		53		26		19·1
Feb. 10	20 35·8		18 52·1		·5147		·3677		23 12·8	
20	20 55·8	20·0	17 29·8	82·3	·5080	67	·3651	26	22 53·4	19·4
Mar. 2	21 15·5	19·7	16 0·2	89·6	·4998	82	·3624	27	22 33·7	19·7
12	21 34·8	19·3	14 24·0	96·2	·4902	96	·3597	27	22 13·5	20·2
		18·9		101·8		111		27		20·4
22	21 53·7		12 42·2		·4791		·3570		21 53·1	
Apr. 1	22 12·3	18·6	10 55·9	106·3	·4666	125	·3544	26	21 32·1	21·0
11	22 30·4	18·1	9 6·2	109·7	·4526	140	·3517	27	21 10·9	21·2
21	22 48·2	17·8	7 14·0	112·2	·4372	154	·3491	26	20 49·2	21·7
		17·2		113·4		169		26		22·2
May 1	23 5·4	16·8	5 20·6	113·7	·4203	185	·3465	25	20 27·0	22·6
11	23 22·2	16·3	3 26·9	112·7	·4018	200	·3440	26	20 4·4	23·2
21	23 38·5	15·7	S. 1 34·2	110·5	·3818	215	·3414	24	19 41·2	23·7
31	23 54·2		N. 0 16·3		·3603		·3390		19 17·5	
		15·0		107·4		231		24		24·4
June 10	0 9·2	14·3	2 3·7	102·7	·3372	248	·3366	23	18 53·1	25·2
20	0 23·5	13·3	3 46·4	97·0	·3124	263	·3343	22	18 27·9	26·2
30	0 36·8	12·2	5 23·4	90·0	·2861	279	·3321	21	18 1·7	27·3
July 10	0 49·0		6 53·4		·2582		·3300		17 34·4	
		10·7		81·1		293		20		28·7
20	0 59·7		8 14·5		·2289		·3280		17 5·7	
30	1 8·8	9·1	9 25·5	71·0	·1984	305	·3261	19	16 35·3	30·4
Aug. 9	1 15·7	6·9	10 24·3	58·8	·1673	311	·3243	18	16 2·7	32·6
19	1 20·1	4·4	11 8·8	44·5	·1360	313	·3227	16	15 27·6	35·1
		+ 1·5		28·1		301		15		38·0
29	1 21·6		11 36·9	+ 9·4	·1059	276	·3212	13	14 49·6	41·2
Sept. 8	1 19·9	— 1·7	11 46·3	— 10·5	·0783	228	·3199	12	14 8·4	44·2
18	1 15·2	4·7	11 35·8	29·5	·0555	161	·3187	11	13 24·2	46·8
28	1 7·8	7·4	11 6·3		·0394		·3176		12 37·4	
		9·0		45·1		— 72		8		48·2
Oct. 8	0 58·8		10 21·2		·0322		·3168		11 49·2	
18	0 49·7	9·1	9 28·3	52·9	·0348	+ 26	·3161	7	11 0·8	48·4
28	0 42·0	7·7	8 37·0	51·3	·0470	122	·3156	5	10 13·9	46·9
Nov. 7	0 36·8	5·2	7 55·8	41·2	·0670	200	·3153	3	9 29·5	44·4
		— 2·1		24·7		258		— 2		41·3
17	0 34·7		7 31·1		·0928		·3151		8 48·2	
27	0 35·9	+ 1·2	7 25·8	— 5·3	·1223	295	·3152	+ 1	8 10·3	37·9
Dec. 7	0 40·4	4·5	7 39·6	+ 13·8	·1535	312	·3154	2	7 35·4	34·9
17	0 47·6	7·2	8 11·4	31·8	·1850	315	·3158	4	7 3·4	32·0
		9·6		46·9		309		6		29·7
27	0 57·2		8 58·3		·2159		·3164		6 33·7	
37	1 8·9	+11·7	N. 9 57·8	+ 59·5	0·2458	+299	0·3172	+ 8	6 6·1	—27·6

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	h m	m	° ′	′					h m	m
Jan. 1	17 4·1	+14·3	S. 37 36·0	−47·4	0·6666	−57	0·5782	+7	22 18·4	−25·2
11	17 18·4	14·0	38 23·4	46·9	·6609	72	·5789	7	21 53·2	25·3
21	17 32·4	13·7	39 10·3	46·8	·6537	89	·5796	7	21 27·9	25·8
31	17 46·1	13·1	39 57·1	47·4	·6448	103	·5803	6	21 2·1	26·3
Feb. 10	17 59·2	12·5	40 44·5	48·9	·6345	118	·5809	5	20 35·8	26·9
20	18 11·7	11·6	41 33·4	51·2	·6227	131	·5814	5	20 8·9	27·8
Mar. 2	18 23·3	10·6	42 24·6	54·8	·6096	142	·5819	4	19 41·1	28·9
12	18 33·9	9·3	43 19·4	59·3	·5954	152	·5823	4	19 12·2	30·2
22	18 43·2	7·7	44 18·7	64·3	·5802	159	·5827	4	18 42·0	31·7
Apr. 1	18 50·9	6·0	45 23·0	69·9	·5643	163	·5831	3	18 10·3	33·5
11	18 56·9	3·9	46 32·9	75·5	·5480	162	·5834	2	17 36·8	35·6
21	19 0·8	+1·5	47 48·4	79·8	·5318	156	·5836	2	17 1·2	38·0
May 1	19 2·3	−1·1	49 8·2	82·2	·5162	145	·5838	2	16 23·2	40·7
11	19 1·2	4·1	50 30·4	80·6	·5017	127	·5840	+1	15 42·5	43·5
21	18 57·1	7·0	51 51·0	74·4	·4890	101	·5841	0	14 59·0	46·5
31	18 50·1	9·6	53 5·4	62·6	·4789	72	·5841	0	14 12·5	49·0
June 10	18 40·5	11·6	54 8·0	45·4	·4717	−36	·5841	−1	13 23·5	50·9
20	18 28·9	12·5	54 53·4	24·3	·4681	0	·5840	1	12 32·6	51·8
30	18 16·4	12·3	55 17·7	−2·4	·4681	+38	·5839	1	11 40·8	51·4
July 10	18 4·1	10·8	55 20·1	+18·1	·4719	72	·5838	2	10 49·4	50·0
20	17 53·3	8·4	55 2·0	34·3	·4791	100	·5836	3	9 59·4	47·6
30	17 44·9	5·5	54 27·7	45·6	·4891	124	·5833	3	9 11·8	44·7
Aug. 9	17 39·4	−2·4	53 42·1	52·2	·5015	140	·5830	3	8 27·1	41·6
19	17 37·0	+0·5	52 49·9	54·7	·5155	150	·5827	4	7 45·5	38·7
29	17 37·5	3·2	51 55·2	54·6	·5305	155	·5823	4	7 6·8	36·0
Sept. 8	17 40·7	5·7	51 0·6	52·8	·5460	155	·5819	5	6 30·8	33·6
18	17 46·4	7·8	50 7·8	50·7	·5615	151	·5814	6	5 57·2	31·6
28	17 54·2	9·6	49 17·1	48·2	·5766	144	·5808	6	5 25·6	29·7
Oct. 8	18 3·8	11·1	48 28·9	46·2	·5910	135	·5802	6	4 55·9	28·3
18	18 14·9	12·4	47 42·7	44·7	·6045	124	·5796	7	4 27·6	27·0
28	18 27·3	13·4	46 58·0	44·1	·6169	111	·5789	7	4 0·6	25·9
Nov. 7	18 40·7	14·2	46 13·9	44·0	·6280	98	·5782	8	3 34·7	25·1
17	18 54·9	14·9	45 29·9	44·5	·6378	84	·5774	9	3 9·6	24·5
27	19 9·8	15·4	44 45·4	45·6	·6462	69	·5765	9	2 45·1	24·0
Dec. 7	19 25·2	15·8	43 59·8	46·9	·6531	54	·5756	9	2 21·1	23·6
17	19 41·0	15·9	43 12·9	48·3	·6585	38	·5747	10	1 57·5	23·4
27	19 56·9	+16·1	42 24·6	+49·8	·6623	+24	·5737	−11	1 34·1	−23·4
37	20 13·0		S. 41 34·8		0·6647		0·5726		1 10·7	

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Month and Day.	Right Ascension. Noon.	Δ₁	Declination. Noon.	Δ₁	Log. of Distance from the Earth. Noon.	Δ₁	Log. of Distance from the Sun. Noon.	Δ₁	Meridian Passage.	Δ₁
	h m	m	° ′	′					h m	m
Jan. 1	20 57·1	+16·3	S. 12 57·0	+64·9	0·5418	+ 91	0·4318	+11	2 13·5	−23·1
11	21 13·4	16·4	11 52·1	71·3	·5509	74	·4329	11	1 50·4	23·0
21	21 29·8	16·3	10 40·8	77·0	·5583	57	·4340	10	1 27·4	23·1
31	21 46·1	16·2	9 23·8	81·8	·5640	41	·4350	10	1 4·3	23·1
Feb. 10	22 2·3	16·1	8 2·0	85·8	·5681	25	·4360	9	0 41·2	23·4
20	22 18·4	15·8	6 36·2	89·2	·5706	+ 8	·4369	9	0 17·8	25·9
Mar. 2	22 34·2	15·7	5 7·0	91·5	·5714	− 8	·4378	8	23 51·9	23·7
12	22 49·9	15·4	3 35·5	93·1	·5706	24	·4386	8	23 28·2	24·0
22	23 5·3	15·2	2 2·4	93·9	·5682	40	·4394	8	23 4·2	24·2
Apr. 1	23 20·5	14·9	S. 0 28·5	93·7	·5642	55	·4402	7	22 40·0	24·6
11	23 35·4	14·5	N. 1 5·2	92·9	·5587	73	·4409	7	22 15·4	24·9
21	23 49·9	14·2	2 38·1	91·1	·5514	88	·4416	7	21 50·5	25·2
May 1	0 4·1	13·8	4 9·2	88·6	·5426	104	·4423	5	21 25·3	25·6
11	0 17·9	13·3	5 37·8	85·2	·5322	120	·4428	6	20 59·7	26·1
21	0 31·2	12·9	7 3·0	81·2	·5202	137	·4434	5	20 33·6	26·6
31	0 44·1	12·2	8 24·2	76·4	·5065	153	·4439	4	20 7·0	27·2
June 10	0 56·3	11·4	9 40·6	70·6	·4912	169	·4443	4	19 39·8	27·9
20	1 7·7	10·6	10 51·2	64·0	·4743	185	·4447	4	19 11·9	28·9
30	1 18·3	9·6	11 55·2	56·6	·4558	201	·4451	3	18 43·0	29·9
July 10	1 27·9	8·3	12 51·8	48·0	·4357	214	·4454	3	18 13·1	31·2
20	1 36·2	6·8	13 39·8	38·4	·4143	226	·4457	2	17 41·9	32·7
30	1 43·0	5·0	14 18·2	27·6	·3917	234	·4459	1	17 9·2	34·4
Aug. 9	1 48·0	3·0	14 45·8	15·1	·3683	237	·4460	+ 2	16 34·8	36·5
19	1 51·0	+ 0·8	15 0·9	+ 1·4	·3446	232	·4462	0	15 58·3	38·7
29	1 51·8	− 1·7	15 2·3	−13·8	·3214	218	·4462	0	15 19·6	41·1
Sept. 8	1 50·1	4·1	14 48·5	29·8	·2996	189	·4462	0	14 38·5	43·4
18	1 46·0	6·1	14 18·7	45·2	·2807	147	·4462	− 1	13 55·1	45·6
28	1 39·9	7·8	13 33·5	58·5	·2660	91	·4461	1	13 9·5	47·1
Oct. 8	1 32·1	8·5	12 35·0	67·1	·2569	− 24	·4460	2	12 22·4	47·8
18	1 23·6	8·2	11 27·9	69·4	·2545	+ 45	·4458	2	11 34·6	47·5
28	1 15·4	7·1	10 18·5	64·8	·2590	111	·4456	2	10 47·1	46·4
Nov. 7	1 8·3	5·2	9 13·7	54·0	·2701	165	·4454	4	10 0·7	44·3
17	1 3·1	2·9	8 19·7	39·5	·2866	205	·4450	3	9 16·4	42·1
27	1 0·2	− 0·4	7 40·2	22·9	·3071	230	·4447	4	8 34·3	39·7
Dec. 7	0 59·8	+ 1·9	7 17·3	− 6·3	·3301	242	·4443	5	7 54·6	37·3
17	1 1·7	4·2	7 11·0	+ 9·0	·3543	244	·4438	5	7 17·3	35·1
27	1 5·9	+ 6·2	7 20·0	+22·6	·3787	+239	·4433	− 5	6 42·2	−33·1
37	1 12·1		N. 7 42·6		0·4026		0·4428		6 9·1	

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	h m	m	° ′	′					h m	m
Jan. 1	14 51·7	+11·4	S. 17 7·7	−52·5	0·5672	−185	0·5098	−38	20 6·0	−28·0
11	15 3·1	10·8	18 0·2	47·7	·5487	206	·5060	40	19 38·0	28·7
21	15 13·9	9·9	18 47·9	42·5	·5281	224	·5020	40	19 9·3	29·5
31	15 23·8	9·0	19 30·4	37·4	·5057	242	·4980	42	18 39·8	30·5
Feb. 10	15 32·8	7·6	20 7·8	32·0	·4815	258	·4938	43	18 9·3	31·8
20	15 40·4	6·1	20 39·8	26·5	·4557	272	·4895	45	17 37·5	33·3
Mar. 2	15 46·5	4·3	21 6·3	20·7	·4285	281	·4850	45	17 4·2	35·2
12	15 50·8	+2·1	21 27·0	14·8	·4004	285	·4805	47	16 29·0	37·4
22	15 52·9	−0·2	21 41·8	8·1	·3719	282	·4758	48	15 51·6	39·7
Apr. 1	15 52·7	2·7	21 49·9	−0·9	·3437	267	·4710	49	15 11·9	42·2
11	15 50·0	5·3	21 50·8	+7·2	·3170	239	·4661	50	14 29·7	44·7
21	15 44·7	7·4	21 43·6	15·5	·2931	199	·4611	52	13 45·0	46·7
May 1	15 37·3	8·9	21 28·1	23·5	·2732	145	·4559	53	12 58·3	48·3
11	15 28·4	9·7	21 4·6	29·8	·2587	81	·4506	54	12 10·0	48·9
21	15 18·7	9·3	20 34·8	32·5	·2506	−15	·4452	55	11 21·1	48·6
31	15 9·4	8·0	20 2·3	31·1	·2491	+47	·4397	57	10 32·5	47·2
June 10	15 1·4	5·8	19 31·2	25·4	·2538	101	·4340	58	9 45·3	45·0
20	14 55·6	3·3	19 5·8	16·4	·2639	139	·4282	59	9 0·3	42·5
30	14 52·3	−0·5	18 49·4	+5·8	·2778	165	·4223	60	8 17·8	39·7
July 10	14 51·8	+2·1	18 43·6	−5·5	·2943	180	·4163	61	7 38·1	37·1
20	14 53·9	4·8	18 49·1	16·0	·3123	184	·4102	62	7 1·0	34·5
30	14 58·7	7·2	19 5·1	25·2	·3307	181	·4040	63	6 26·5	32·1
Aug. 9	15 5·9	9·4	19 30·3	32·7	·3488	175	·3977	63	5 54·4	30·0
19	15 15·3	11·3	20 3·0	38·1	·3663	163	·3914	65	5 24·4	28·0
29	15 26·6	13·2	20 41·1	41·5	·3826	151	·3849	64	4 56·4	26·2
Sept. 8	15 39·8	14·8	21 22·6	42·7	·3977	137	·3785	66	4 30·2	24·5
18	15 54·6	16·3	22 5·3	41·9	·4114	123	·3719	65	4 5·7	23·0
28	16 10·9	17·8	22 47·2	38·9	·4237	108	·3654	66	3 42·7	21·6
Oct. 8	16 28·7	19·1	23 26·1	34·0	·4345	94	·3588	65	3 21·1	20·3
18	16 47·8	20·3	24 0·1	27·1	·4439	80	·3523	65	3 0·8	19·1
28	17 8·1	21·4	24 27·2	18·1	·4519	67	·3458	64	2 41·7	18·0
Nov. 7	17 29·5	22·3	24 45·3	−7·8	·4586	53	·3394	63	2 23·7	17·0
17	17 51·8	23·1	24 53·1	+4·3	·4639	41	·3331	62	2 6·7	16·3
27	18 14·9	23·9	24 48·8	17·6	·4680	30	·3269	60	1 50·4	15·6
Dec. 7	18 38·8	24·3	24 31·2	31·8	·4710	19	·3209	57	1 34·8	15·1
17	19 3·1	24·6	23 59·4	46·6	·4729	+8	·3152	55	1 19·7	14·7
27	19 27·7	+24·9	23 12·8	+61·5	·4737	−1	·3097	−53	1 5·0	−14·6
37	19 52·6		S. 22 11·3		0·4736		0·3044		0 50·4	

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	h m	m	° ′	′					h m	m
Jan. 1	0 20·2	+ 5·9	N. 6 18·2	+37·9	0·5494	+179	0·5581	− 2	5 36·1	−33·5
11	0 26·1	7·0	6 56·1	45·5	·5673	166	·5579	4	5 2·6	32·3
21	0 33·1	8·0	7 41·6	51·8	·5839	152	·5575	3	4 30·3	31·4
31	0 41·1	8·9	8 33·4	57·1	·5991	135	·5572	5	3 58·9	30·4
Feb. 10	0 50·0	9·7	9 30·5	61·6	·6126	118	·5567	4	3 28·5	29·7
20	0 59·7	10·2	10 32·1	64·9	·6244	102	·5563	6	2 58·8	29·1
Mar. 2	1 9·9	10·8	11 37·0	67·5	·6346	84	·5557	6	2 29·7	28·6
12	1 20·7	11·3	12 44·5	69·1	·6430	66	·5551	7	2 1·1	28·1
22	1 32·0	11·6	13 53·6	70·0	·6496	49	·5544	7	1 33·0	27·8
April 1	1 43·6	11·9	15 3·6	70·2	·6545	32	·5537	8	1 5·2	27·4
11	1 55·5	12·2	16 13·8	69·9	·6577	+ 16	·5529	8	0 37·8	27·2
21	2 7·7	12·4	17 23·7	68·8	·6593	− 2	·5521	9	0 10·6	29·7
May 1	2 20·1	12·5	18 32·5	67·5	·6591	18	·5512	10	23 40·9	26·8
11	2 32·6	12·6	19 40·0	65·5	·6573	34	·5502	10	23 14·1	26·8
21	2 45·2	12·6	20 45·5	63·3	·6539	52	·5492	11	22 47·3	26·8
31	2 57·8	12·5	21 48·8	60·7	·6487	67	·5481	12	22 20·5	26·8
June 10	3 10·3	12·4	22 49·5	58·1	·6420	84	·5469	12	21 53·7	27·0
20	3 22·7	12·3	23 47·6	55·0	·6336	101	·5457	12	21 26·7	27·2
30	3 35·0	11·8	24 42·6	52·2	·6235	117	·5445	14	20 59·5	27·5
July 10	3 46·8	11·5	25 34·8	49·3	·6118	133	·5431	14	20 32·0	28·0
20	3 58·3	10·8	26 24·1	46·5	·5985	149	·5417	14	20 4·0	28·5
30	4 9·1	10·2	27 10·6	44·0	·5836	165	·5403	15	19 35·5	29·3
Aug. 9	4 19·3	9·2	27 54·6	41·8	·5671	181	·5388	16	19 6·2	30·3
19	4 28·5	8·0	28 36·4	39·7	·5490	194	·5372	17	18 35·9	31·4
29	4 36·5	6·7	29 16·1	38·2	·5296	206	·5355	17	18 4·5	32·8
Sept. 8	4 43·2	5·0	29 54·3	36·6	·5090	216	·5338	17	17 31·7	34·5
18	4 48·2	3·0	30 30·9	35·0	·4874	220	·5321	19	16 57·2	36·4
28	4 51·2	+ 0·9	31 5·9	32·8	·4654	220	·5302	18	16 20·8	38·6
Oct. 8	4 52·1	− 1·6	31 38·7	29·5	·4434	212	·5284	20	15 42·2	41·1
18	4 50·5	4·1	32 8·2	24·2	·4222	194	·5264	20	15 1·1	43·5
28	4 46·4	6·5	32 32·4	16·6	·4028	165	·5244	20	14 17·6	46·0
Nov. 7	4 39·9	8·5	32 49·0	+ 6·4	·3863	124	·5224	22	13 31·6	47·8
17	4 31·4	9·8	32 55·4	− 5·5	·3739	75	·5202	22	12 43·8	49·0
27	4 21·6	10·0	32 49·9	17·5	·3664	− 19	·5180	22	11 54·8	49·3
Dec. 7	4 11·6	9·3	32 32·4	27·3	·3645	+ 37	·5158	23	11 5·5	48·5
17	4 2·3	7·8	32 5·1	33·6	·3682	87	·5135	24	10 17·0	47·0
27	3 54·5	− 5·3	31 31·5	−34·3	·3769	+129	·5111	−25	9 30·0	−44·5
37	3 49·2		N. 30 57·2		0·3898		0·5086		8 45·5	

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	h m	m	° ′	′					h m	m
Jan. 1	14 18·4	+ 8·0	S. 21 57·6	— 78·0	0·5880	— 148	0·5456	+ 10	19 32·5	— 31·5
11	14 26·4	6·8	23 15·6	75·2	·5732	163	·5466	10	19 1·0	32·6
21	14 33·2	5·5	24 30·8	72·1	·5569	175	·5476	9	18 28·4	34·0
31	14 38·7	3·9	25 42·9	68·6	·5394	185	·5485	8	17 54·4	35·5
Feb. 10	14 42·6	+ 2·1	26 51·5	64·0	·5209	191	·5493	7	17 18·9	37·4
20	14 44·7	— 0·1	27 55·5	58·5	·5018	190	·5500	6	16 41·5	39·5
Mar. 2	14 44·6	2·2	28 54·0	51·1	·4828	184	·5506	5	16 2·0	41·7
12	14 42·4	4·6	29 45·1	41·4	·4644	167	·5511	5	15 20·3	44·0
22	14 37·8	6·7	30 26·5	29·3	·4477	143	·5516	4	14 36·3	46·1
Apr. 1	14 31·1	8·5	30 55·8	— 14·5	·4334	109	·5520	2	13 50·2	47·8
11	14 22·6	9·6	31 10·3	+ 1·2	·4225	67	·5522	2	13 2·4	49·0
21	14 13·0	10·1	31 9·1	16·5	·4158	— 19	·5524	+ 2	12 13·4	49·3
May 1	14 2·9	9·6	30 52·6	29·2	·4139	+ 30	·5526	0	11 24·1	48·8
11	13 53·3	8·3	30 23·4	37·7	·4169	75	·5526	— 1	10 35·3	47·5
21	13 45·0	6·6	29 45·7	41·1	·4244	113	·5525	1	9 47·8	45·8
31	13 38·4	4·4	29 4·6	39·6	·4357	144	·5524	2	9 2·0	43·7
June 10	13 34·0	— 2·3	28 25·0	34·5	·4501	166	·5522	3	8 18·3	41·5
20	13 31·7	0·0	27 50·5	25·8	·4667	177	·5519	4	7 36·8	39·3
30	13 31·7	+ 1·9	27 24·7	16·7	·4844	182	·5515	5	6 57·5	37·3
July 10	13 33·6	3·5	27 8·0	+ 6·6	·5026	182	·5510	5	6 20·2	35·8
20	13 37·1	5·8	27 1·4	— 3·1	·5208	175	·5505	7	5 44·4	33·6
30	13 42·9	6·8	27 4·5	12·3	·5383	167	·5498	7	5 10·8	32·4
Aug. 9	13 49·7	8·2	27 16·8	20·5	·5550	155	·5491	8	4 38·4	31·2
19	13 57·9	9·3	27 37·3	27·5	·5705	142	·5483	9	4 7·2	30·0
29	14 7·2	10·4	28 4·8	33·5	·5847	128	·5474	10	3 37·2	29·1
Sept. 8	14 17·6	11·2	28 38·3	38·4	·5975	113	·5464	11	3 8·1	28·1
18	14 28·8	12·1	29 16·7	42·2	·6088	96	·5453	12	2 40·0	27·3
28	14 40·9	12·8	29 58·9	45·1	·6184	81	·5441	12	2 12·7	26·5
Oct. 8	14 53·7	13·4	30 44·0	46·9	·6265	64	·5429	14	1 46·2	25·9
18	15 7·1	14·1	31 30·9	47·8	·6329	47	·5415	14	1 20·3	25·3
28	15 21·2	14·6	32 18·7	47·9	·6376	30	·5401	15	0 55·0	24·8
Nov. 7	15 35·8	15·1	33 6·6	47·1	·6406	+ 14	·5386	16	0 30·2	24·3
17	15 50·9	15·5	33 53·7	46·0	·6420	— 5	·5370	17	29 0 5·9	25·8
27	16 6·4	15·9	34 39·7	44·2	·6415	21	·5353	18	23 40·1	23·9
Dec. 7	16 22·3	16·1	35 23·9	42·0	·6394	39	·5335	19	23 16·2	23·3
17	16 38·4	16·2	36 5·9	39·4	·6355	56	·5316	20	22 52·9	23·2
27	16 54·6	+ 16·3	36 45·3	— 36·8	·6299	— 74	·5296	— 21	22 29·7	— 23·0
37	17 10·9		S. 37 22·1		0·6225		0·5275		22 6·7	

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	h m	m	° ′	′					h m	m
Jan. 1	15 25·2		S. 20 8·9		0·5596		0·4830		20 39·6	
		+13·0		−52·1		−127		+11		−26·5
11	15 38·2		21 1·0		·5469		·4841		20 13·1	
		12·3		46·7		144		10		27·1
21	15 50·5		21 47·7		·5325		·4851		19 46·0	
		11·4		41·5		162		10		28·0
31	16 1·9		22 29·2		·5163		·4861		19 18·0	
		10·4		36·5		178		9		29·1
Feb. 10	16 12·3		23 5·7		·4985		·4870		18 48·9	
		9·0		31·8		193		9		30·5
20	16 21·3		23 37·5		·4792		·4879		18 18·4	
		7·5		27·4		205		7		32·0
Mar. 2	16 28·8		24 4·9		·4587		·4886		17 46·4	
		5·7		23·5		216		7		33·8
12	16 34·5		24 28·4		·4371		·4893		17 12·6	
		3·5		19·5		220		6		35·9
22	16 38·0		24 47·9		·4151		·4899		16 36·7	
		+1·3		15·6		218		5		38·2
Apr. 1	16 39·3		25 3·5		·3933		·4904		15 58·5	
		−1·2		11·2		208		4		40·7
11	16 38·1		25 14·7		·3725		·4908		15 17·8	
		3·8		− 5·9		187		4		43·2
21	16 34·3		25 20·6		·3538		·4912		14 34·6	
		6·1		+ 0·3		156		3		45·6
May 1	16 28·2		25 20·3		·3382		·4915		13 49·0	
		8·0		7·5		111		2		47·4
11	16 20·2		25 12·8		·3271		·4917		13 1·6	
		9·3		14·8		− 58		2		48·5
21	16 10·9		24 58·0		·3213		·4919		12 13·1	
		9·6		20·9		+ 1		+ 1		48·9
31	16 1·3		24 37·1		·3214		·4920		11 24·2	
		9·1		24·9		59		− 1		48·3
June 10	15 52·2		24 12·2		·3273		·4919		10 35·9	
		7·6		25·1		111		0		46·8
20	15 44·6		23 47·1		·3384		·4919		9 49·1	
		5·6		22·7		155		2		44·8
30	15 39·0		23 24·4		·3539		·4917		9 4·3	
		3·3		17·4		185		2		42·5
July 10	15 35·7		23 7·0		·3724		·4915		8 21·8	
		−0·8		10·6		204		3		40·1
20	15 34·9		22 56·4		·3928		·4912		7 41·7	
		+1·4		+ 3·3		214		4		37·8
30	15 36·3		22 53·1		·4142		·4908		7 3·9	
		3·6		− 4·0		215		4		35·6
Aug. 9	15 39·9		22 57·1		·4357		·4904		6 28·3	
		5·6		10·1		212		6		33·7
19	15 45·5		23 7·2		·4569		·4898		5 54·6	
		7·4		15·1		202		6		32·0
29	15 52·9		23 22·3		·4771		·4892		5 22·6	
		9·0		18·8		191		6		30·4
Sept. 8	16 1·9		23 41·1		·4962		·4886		4 52·2	
		10·3		21·2		176		8		29·0
18	16 12·2		24 2·3		·5138		·4878		4 23·2	
		11·5		22·0		162		8		27·8
28	16 23·7		24 24·3		·5300		·4870		3 55·4	
		12·6		21·8		145		10		26·8
Oct. 8	16 36·3		24 46·1		·5445		·4860		3 28·6	
		13·6		20·1		129		9		25·8
18	16 49·9		25 6·2		·5574		·4851		3 2·8	
		14·4		17·6		111		11		25·0
28	17 4·3		25 23·8		·5685		·4840		2 37·8	
		15·0		13·8		95		11		24·3
Nov. 7	17 19·3		25 37·6		·5780		·4829		2 13·5	
		15·7		9·5		77		12		23·7
17	17 35·0		25 47·1		·5857		·4817		1 49·8	
		16·1		− 4·2		59		13		23·3
27	17 51·1		25 51·3		·5916		·4804		1 26·5	
		16·5		+ 1·4		42		14		22·9
Dec. 7	18 7·6		25 49·9		·5958		·4790		1 3·6	
		16·8		7·6		25		14		22·6
17	18 24·4		25 42·3		·5983		·4776		0 41·0	
		16·9		13·9		+ 8		15		22·5
27	18 41·3		25 28·4		·5991		·4761		35 0 18·5	
		+17·0		+20·2		− 11		−16		−24·6
37	18 58·3		S. 25 8·2		0·5980		0·4745		23 53·9	

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Month and Day.	Right Ascension. Noon.	Δ₁	Declination. Noon.	Δ₁	Log. of Distance from the Earth. Noon.	Δ₁	Log. of Distance from the Sun. Noon.	Δ₁	Meridian Passage.	Δ₁
	h m	m	° ′	′					h m	m
Jan. 1	18 26·4	+16·0	S. 25 19·9	+20·7	0·6170	−20	0·5000	+2	23 40·8	−23·5
11	18 42·4	15·7	24 59·2	26·2	·6150	37	·5002	2	23 17·3	23·7
21	18 58·1	15·3	24 33·0	31·2	·6113	55	·5004	+1	22 53·6	24·1
31	19 13·4	14·9	24 1·8	35·8	·6058	73	·5005	0	22 29·5	24·5
Feb. 10	19 28·3	14·4	23 26·0	39·9	·5985	91	·5005	0	22 5·0	25·1
20	19 42·7	13·7	22 46·1	43·0	·5894	108	·5005	−1	21 39·9	25·7
Mar. 2	19 56·4	13·1	22 3·1	45·6	·5786	125	·5004	2	21 14·2	26·4
12	20 9·5	12·2	21 17·5	47·1	·5661	143	·5002	2	20 47·8	27·3
22	20 21·7	11·2	20 30·4	47·4	·5518	159	·5000	3	20 20·5	28·2
Apr. 1	20 32·9	10·1	19 43·0	47·2	·5359	175	·4997	3	19 52·3	29·3
11	20 43·0	9·0	18 55·8	45·4	·5184	191	·4994	4	19 23·0	30·5
21	20 52·0	7·6	18 10·4	42·3	·4993	203	·4990	5	18 52·5	31·9
May 1	20 59·6	6·0	17 28·1	38·1	·4790	215	·4985	5	18 20·6	33·5
11	21 5·6	4·3	16 50·0	32·5	·4575	223	·4980	6	17 47·1	35·2
21	21 9·9	2·4	16 17·5	25·9	·4352	226	·4974	7	17 11·9	37·1
31	21 12·3	+0·2	15 51·6	18·1	·4126	222	·4967	7	16 34·8	39·1
June 10	21 12·5	−1·9	15 33·5	9·8	·3904	210	·4960	8	15 55·7	41·4
20	21 10·6	4·1	15 23·7	+1·4	·3694	187	·4952	9	15 14·3	43·6
30	21 6·5	6·2	15 22·3	−6·2	·3507	153	·4943	9	14 30·7	45·5
July 10	21 0·3	7·8	15 28·5	12·1	·3354	107	·4934	10	13 45·2	47·2
20	20 52·5	8·8	15 40·6	15·6	·3247	−52	·4924	10	12 58·0	48·1
30	20 43·7	9·1	15 56·2	16·5	·3195	+5	·4914	11	12 9·9	48·3
Aug. 9	20 34·6	8·3	16 12·7	14·9	·3200	64	·4903	11	11 21·6	47·6
19	20 26·3	6·9	16 27·6	11·3	·3264	116	·4892	13	10 34·0	46·1
29	20 19·4	5·0	16 38·9	6·6	·3380	156	·4879	13	9 47·9	44·2
Sept. 8	20 14·4	2·6	16 45·5	−0·9	·3536	185	·4866	13	9 3·7	41·8
18	20 11·8	−0·2	16 46·4	+4·6	·3721	203	·4853	14	8 21·9	39·4
28	20 11·6	+2·1	16 41·8	10·7	·3924	211	·4839	15	7 42·5	37·2
Oct. 8	20 13·7	4·2	16 31·1	16·8	·4135	211	·4824	15	7 5·3	35·0
18	20 17·9	6·2	16 14·3	23·3	·4346	205	·4809	16	6 30·3	33·2
28	20 24·1	7·8	15 51·0	29·8	·4551	195	·4793	16	5 57·1	31·4
Nov. 7	20 31·9	9·3	15 21·2	36·7	·4746	183	·4777	17	5 25·7	30·1
17	20 41·2	10·5	14 44·5	43·5	·4929	167	·4760	18	4 55·6	28·9
27	20 51·7	11·4	14 1·0	50·4	·5096	151	·4742	18	4 26·7	27·9
Dec. 7	21 3·1	12·3	13 10·6	57·2	·5247	135	·4724	19	3 58·8	27·1
17	21 15·4	12·9	12 13·4	63·9	·5382	116	·4705	19	3 31·7	26·4
27	21 28·3	+13·5	11 9·5	+70·3	·5498	+100	·4686	−20	3 5·3	−25·9
37	21 41·8		S. 9 59·2		0·5598		0·4666		2 39·4	

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Month and Day.	Right Ascension. Noon.		Declination. Noon.		Log. of Distance from the Earth. Noon.		Log. of Distance from the Sun. Noon.		Meridian Passage.	
	h m	Δ₁ m	° ′	Δ₁ ′		Δ₁		Δ₁	h m	Δ₁ m
Jan. 1	19 18·7		S. 16 45·3		0·5565		0·4212		0 35·3	
		+18·6		+25·5		+ 3		−18		−20·9
11	19 37·3		16 19·8		·5568		·4194		,,0 14·4	
		18·6		34·4		− 13		17		22·8
21	19 55·9		15 45·4		·5555		·4177		23 51·6	
		18·5		42·7		28		18		20·9
31	20 14·4		15 2·7		·5527		·4159		23 30·7	
		18·3		50·3		43		17		21·1
Feb. 10	20 32·7		14 12·4		·5484		·4142		23 9·6	
		18·1		56·9		58		16		21·3
20	20 50·8		13 15·5		·5426		·4126		22 48·3	
		17·9		62·7		73		17		21·6
Mar. 2	21 8·7		12 12·8		·5353		·4109		22 26·7	
		17·5		67·5		88		16		21·9
12	21 26·2		11 5·3		·5265		·4093		22 4·8	
		17·1		71·2		103		15		22·3
22	21 43·3		9 54·1		·5162		·4078		21 42·5	
		16·7		73·6		119		15		22·7
Apr. 1	22 0·0		8 40·5		·5043		·4063		21 19·8	
		16·3		74·8		133		15		23·2
11	22 16·3		7 25·7		·4910		·4048		20 56·6	
		15·7		74·7		149		14		23·7
21	22 32·0		6 11·0		·4761		·4034		20 32·9	
		15·2		73·2		165		13		24·3
May 1	22 47·2		4 57·8		·4596		·4021		20 8·6	
		14·5		70·2		180		13		24·8
11	23 1·7		3 47·6		·4416		·4008		19 43·8	
		13·9		65·7		196		12		25·6
21	23 15·6		2 41·9		·4220		·3996		19 18·2	
		13·0		59·4		211		11		26·5
31	23 28·6		1 42·5		·4009		·3985		18 51·7	
		12·1		51·6		226		11		27·3
June 10	23 40·7		0 50·9		·3783		·3974		18 24·4	
		10·9		41·4		241		10		28·5
20	23 51·6		S. 0 9·5		·3542		·3964		17 55·9	
		9·7		29·5		252		9		29·9
30	0 1·3		N. 0 20·0		·3290		·3955		17 26·0	
		8·1		+15·1		262		8		31·3
July 10	0 9·4		0 35·1		·3028		·3947		16 54·7	
		6·3		− 1·5		266		8		33·2
20	0 15·7		0 33·6		·2762		·3939		16 21·5	
		4·2		20·1		264		6		35·3
30	0 19·9		N. 0 13·5		·2498		·3933		15 46·2	
		+1·9		40·1		252		6		37·6
Aug. 9	0 21·8		S. 0 26·6		·2246		·3927		15 8·6	
		−0·6		60·3		226		5		40·0
19	0 21·2		1 26·9		·2020		·3922		14 28·6	
		2·9		78·5		185		4		42·4
29	0 18·3		2 45·4		·1835		·3918		13 46·2	
		5·1		91·9		127		2		44·5
Sept. 8	0 13·2		4 17·3		·1708		·3916		13 1·7	
		6·6		97·4		− 56		2		45·9
18	0 6·6		5 54·7		·1652		·3914		12 15·8	
		7·0		93·3		+ 24		− 1		46·3
28	23 59·6		7 28·0		·1676		·3913		11 29·5	
		6·6		80·1		99		0		45·8
Oct. 8	23 53·0		8 48·1		·1775		·3913		10 43·7	
		5·2		59·9		165		+ 1		44·4
18	23 47·8		9 48·0		·1940		·3914		9 59·3	
		3·0		36·4		216		2		42·2
28	23 44·8		10 24·4		·2156		·3916		9 17·1	
		−0·5		−12·4		250		3		39·8
Nov. 7	23 44·3		10 36·8		·2406		·3919		8 37·3	
		+ 1·9		+10·2		270		3		37·3
17	23 46·2		10 26·6		·2676		·3922		8 0·0	
		4·4		28·9		271		5		34·9
27	23 50·6		9 57·7		·2947		·3927		7 25·1	
		6·5		45·8		271		5		32·8
Dec. 7	23 57·1		9 11·9		·3218		·3932		6 52·3	
		8·3		59·6		263		7		31·0
17	0 5·4		8 12·3		·3481		·3939		6 21·3	
		10·0		70·6		250		7		29·4
27	0 15·4		7 1·7		·3731		·3946		5 51·9	
		+11·2		+79·3		+235		+ 8		−28·1
37	0 26·6		S. 5 42·4		0·3966		0·3954		5 23·8	

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	h m	m	° ′	′					h m	m
Jan. 1	23 53·4	+14·6	S. 5 3·9	+113·1	0·3409	+225	0·3362	+ 4	5 9·5	−24·8
11	0 8·0	15·4	3 10·8	116·9	·3634	207	·3366	4	4 44·7	24·0
21	0 23·4	16·2	S. 1 13·9	119·5	·3841	190	·3370	4	4 20·7	23·2
31	0 39·6		N. 0 45·6		·4031		·3375	5	3 57·5	
		16·8		120·7		172		6		22·6
Feb. 10	0 56·4	17·3	2 46·3	120·7	·4203	155	·3381	6	3 34·9	22·0
20	1 13·7	17·9	4 47·0	119·4	·4358	140	·3387	6	3 12·9	21·5
Mar. 2	1 31·6	18·3	6 46·4	116·8	·4498	123	·3393	7	2 51·4	21·1
12	1 49·9		8 43·2		·4621		·3400	8	2 30·3	
		18·7		113·1		108				20·6
22	2 8·6	19·2	10 36·3	108·3	·4729	94	·3408	7	2 9·7	20·2
Apr. 1	2 27·8	19·7	12 24·6	102·4	·4823	80	·3415	8	1 49·5	19·8
11	2 47·5	20·0	14 7·0	95·6	·4903	66	·3423	9	1 29·7	19·4
21	3 7·5		15 42·6		·4969		·3432		1 10·3	
		20·3		87·6		52		8		19·1
May 1	3 27·8	20·7	17 10·2	78·9	·5021	39	·3440	9	0 51·2	18·7
11	3 48·5	20·9	18 29·1	69·5	·5060	27	·3449	9	0 32·5	18·4
21	4 9·4	21·2	19 38·6	59·4	·5087	13	·3458	10	0 14·1	20·1
31	4 30·6		20 38·0		·5100		·3468		23 54·0	
		21·4		48·8		+ 1		9		18·6
June 10	4 52·0	21·4	21 26·8	38·0	·5101	− 12	·3477	10	23 36·0	17·9
20	5 13·4	21·5	22 4·8	26·9	·5089	25	·3487	10	23 18·1	17·9
30	5 34·9	21·4	22 31·7	15·8	·5064	38	·3497	10	23 0·2	18·0
July 10	5 56·3		22 47·5		·5026		·3507		22 42·2	
		21·3		+ 5·1		52		10		18·1
20	6 17·6	21·0	22 52·6	− 5·3	·4974	65	·3517	10	22 24·0	18·4
30	6 38·6	20·7	22 47·3	15·1	·4909	79	·3527	10	22 5·6	18·8
Aug. 9	6 59·3	20·2	22 32·2	23·9	·4830	94	·3537	10	21 46·8	19·2
19	7 19·5		22 8·3		·4736		·3547		21 27·6	
		19·7		31·8		109		10		19·8
29	7 39·2	19·1	21 36·5	38·6	·4627	126	·3557	10	21 7·8	20·4
Sept. 8	7 58·3	18·3	20 57·9	44·0	·4501	141	·3567	10	20 47·4	21·1
18	8 16·6	17·5	20 13·9	47·7	·4360	159	·3577	10	20 26·3	21·9
28	8 34·1		19 26·2		·4201		·3587		20 4·4	
		16·6		49·8		177		10		22·9
Oct. 8	8 50·7	15·6	18 36·4	49·8	·4024	195	·3597	9	19 41·5	23·9
18	9 6·3	14·4	17 46·6	47·9	·3829	213	·3606	10	19 17·6	25·1
28	9 20·7	13·0	16 58·7	43·6	·3616	231	·3616	9	18 52·5	26·5
Nov. 7	9 33·7		16 15·1		·3385		·3625		18 26·0	
		11·4		36·5		249		9		28·1
17	9 45·1	9·5	15 38·6	26·8	·3136	264	·3634	9	17 57·9	30·0
27	9 54·6	7·3	15 11·8	− 14·2	·2872	274	·3643	8	17 27·9	32·2
Dec. 7	10 1·9	4·9	14 57·6	+ 1·1	·2598	279	·3651	9	16 55·7	34·7
17	10 6·8		14 58·7		·2319		·3660		16 21·0	
		+ 1·9		18·5		273		8		37·5
27	10 8·7		15 17·2		·2046	−253	·3668		15 43·5	−40·6
37	10 7·6	− 1·1	N. 15 53·8	+ 36·6	0·1793		0·3675	+ 7	15 2·9	

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	h m s	m	° ′ ″	′					h m s	m
Jan. 1	4 42 8		N.21 47 8		0·2409		0·4226		9 57 5	
		− 6·4		+ 16·9		+ 239		+ 34		− 45·6
11	4 36 4		22 4 7		·2648		·4260		9 11 9	
		3·3		19·1		272		32		42·5
21	4 33 1		22 23 8		·2920		·4292		8 29 4	
		− 0·3		22·0		287		32		39·5
31	4 32 8		22 45 8		·3207		·4324		7 49 9	
		+ 2·5		24·6		290		30		36·7
Feb. 10	4 35 3		23 10 4		·3497		·4354		7 13 2	
		5·1		26·6		285		29		34·2
20	4 40 4		23 37 0		·3782		·4383		6 39 0	
		7·3		27·5		273		27		32·0
Mar. 2	4 47 7		24 4 5		·4055		·4410		6 7 0	
		9·1		27·2		258		27		30·3
12	4 56 8		24 31 7		·4313		·4437		5 36 7	
		10·7		25·7		240		25		28·6
22	5 7 5		24 57 4		·4553		·4462		5 8 1	
		12·0		23·3		220		25		27·4
Apr. 1	5 19 5		25 20 7		·4773		·4487		4 40 7	
		13·0		19·7		201		23		26·3
11	5 32 5		25 40 4		·4974		·4510		4 14 4	
		14·0		15·3		182		22		25·3
21	5 46 5		25 55 7		·5156		·4532		3 49 1	
		14·7		10·3		161		21		24·7
May 1	6 1 2		26 6 0		·5317		·4553		3 24 4	
		15·2		+ 4·8		143		19		24·2
11	6 16 4		26 10 8		·5460		·4572		3 0 2	
		15·7		− 1·2		125		19		23·7
21	6 32 1		26 9 6		·5585		·4591		2 36 5	
		16·1		7·2		107		17		23·3
31	6 48 2		26 2 4		·5692		·4608		2 13 2	
		16·2		13·4		89		17		23·2
June 10	7 4 4		25 49 0		·5781		·4625		1 50 0	
		16·3		19·6		71		15		23·1
20	7 20 7		25 29 4		·5852		·4640		1 26 9	
		16·3		25·5		55		14		23·0
30	7 37 0		25 3 9		·5907		·4654		1 3 9	
		16·4		31·1		37		13		23·1
July 10	7 53 4		24 32 8		·5944		·4667		0 40 8	
		16·2		36·4		21		12		23·1
20	8 9 6		23 56 4		·5965		·4679		0 17 7	
		16·0		41·1		+ 4		10		25·7
30	8 25 6		23 15 3		·5969		·4689		23 52 0	
		15·8		45·2		− 13		10		23·6
Aug. 9	8 41 4		22 30 1		·5956		·4699		23 28 4	
		15·6		48·8		29		8		23·9
19	8 57 0		21 41 3		·5927		·4707		23 4 5	
		15·2		51·4		47		8		24·2
29	9 12 2		20 49 9		·5880		·4715		22 40 3	
		14·8		53·3		64		6		24·6
Sept. 8	9 27 0		19 56 6		·5816		·4721		22 15 7	
		14·4		54·1		82		6		25·0
18	9 41 4		19 2 5		·5734		·4727		21 50 7	
		13·9		54·0		99		4		25·6
28	9 55 3		18 8 5		·5635		·4731		21 25 1	
		13·4		52·6		118		3		26·0
Oct. 8	10 8 7		17 15 9		·5517		·4734		20 59 1	
		12·7		50·0		136		+ 2		26·7
18	10 21 4		16 25 9		·5381		·4736		20 32 4	
		12·1		46·0		155		0		27·4
28	10 33 5		15 39 9		·5226		·4736		20 5 0	
		11·1		40·4		173		0		28·3
Nov. 7	10 44 6		14 59 5		·5053		·4736		19 36 7	
		10·2		33·2		191		− 1		29·2
17	10 54 8		14 26 3		·4862		·4735		19 7 5	
		9·1		24·3		207		2		30·4
27	11 3 9		14 2 0		·4655		·4733		18 37 1	
		7·7		13·4		223		4		31·8
Dec. 7	11 11 6		13 48 6		·4432		·4729		18 5 3	
		6·1		− 0·7		234		4		33·4
17	11 17 7		13 47 9		·4198		·4725		17 31 9	
		4·3		+ 13·5		241		6		35·1
27	11 22 0		14 1 4		·3957		·4719		16 56 8	
		+ 2·2		+ 28·9		− 241		− 7		− 37·3
37	11 24 2		N.14 30 3		0·3716		0·4712		16 19 5	

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MEAN TIME AT GREENWICH.

Month and Day.	*Apparent* Right Ascension. *Noon.*	Δ₁	*Apparent* Declination. *Noon.*	Δ₁	Log. of True Dist. from the Earth. *Noon.*	Δ₁	Meridian Passage.	Δ₁
	h m s	s	° ′ ″	″			h m	m
Jan. 1	23 25 42·62	+20·75	S. 4 58 41·4	+142·2	1·480411	1144	4 41·6	—19·3
6	23 26 3·37	23·51	4 56 19·2	159·5	·481555	1097	4 22·3	19·3
11	23 26 26·88	26·18	4 53 39·7	176·1	·482652	1039	4 3·0	19·2
16	23 26 53·06	28·65	4 50 43·6	191·2	·483691	975	3 43·8	19·2
21	23 27 21·71	30·94	4 47 32·4	205·3	·484666	904	3 24·6	19·2
26	23 27 52·65	33·03	4 44 7·1	217·9	·485570	829	3 5·4	19·1
31	23 28 25·68	34·93	4 40 29·2	229·4	·486399	747	2 46·3	19·1
Feb. 5	23 29 0·61	36·62	4 36 39·8	239·5	·487146	661	2 27·2	19·0
10	23 29 37·23	38·11	4 32 40·3	248·1	·487807	571	2 8·2	19·0
15	23 30 15·34	39·34	4 28 32·2	255·2	·488378	477	1 49·2	19·0
20	23 30 54·68	40·33	4 24 17·0	260·8	·488855	380	1 30·2	19·0
25	23 31 35·01	41·10	4 19 56·2	264·9	·489235	282	1 11·2	19·0
Mar. 2	23 32 16·11	41·64	4 15 31·3	267·4	·489517	184	0 52·2	19·0
7	23 32 57·75	41·93	4 11 3·9	268·4	·489701	+82	0 33·2	18·9
12	23 33 39·68	42·00	4 6 35·5	268·0	·489783	—18	0 14·3	22·8
17	23 34 21·68	41·83	4 2 7·5	265·9	·489765	118	23 51·5	19·0
22	23 35 3·51	41·39	3 57 41·6	262·2	·489647	218	23 32·5	19·0
27	23 35 44·90	40·75	3 53 19·4	257·1	·489429	314	23 13·5	18·9
Apr. 1	23 36 25·65	39·90	3 49 2·3	250·8	·489115	408	22 54·6	19·0
6	23 37 5·55	38·84	3 44 51·5	243·1	·488707	501	22 35·6	19·0
11	23 37 44·39	37·54	3 40 48·4	233·8	·488206	589	22 16·6	19·1
16	23 38 21·93	36·05	3 36 54·6	223·3	·487617	675	21 57·5	19·1
21	23 38 57·98	34·34	3 33 11·3	211·5	·486942	754	21 38·4	19·1
26	23 39 32·32	32·48	3 29 39·8	198·7	·486188	830	21 19·3	19·1
May 1	23 40 4·80	30·44	3 26 21·1	184·8	·485358	899	21 0·2	19·2
6	23 40 35·24	28·25	3 23 16·3	170·0	·484459	964	20 41·0	19·2
11	23 41 3·49	25·88	3 20 26·3	154·1	·483495	1022	20 21·8	19·2
16	23 41 29·37	23·40	3 17 52·2	137·4	·482473	1074	20 2·6	19·2
21	23 41 52·77	20·77	3 15 34·8	119·8	·481399	1118	19 43·4	19·3
26	23 42 13·54	18·06	3 13 35·0	101·9	·480281	1154	19 24·1	19·4
31	23 42 31·60	15·26	3 11 53·1	83·4	·479127	1185	19 4·7	19·4
June 5	23 42 46·86	12·38	3 10 29·7	64·4	·477942	1205	18 45·3	19·5
10	23 42 59·24	9·41	3 9 25·3	44·9	·476737	1220	18 25·8	19·5
15	23 43 8·65	6·43	3 8 40·4	25·6	·475517	1224	18 6·3	19·6
20	23 43 15·08	3·42	3 8 14·8	+6·1	·474293	1220	17 46·7	19·6
25	23 43 18·50	+0·44	3 8 8·7	—13·1	·473073	1208	17 27·1	19·7
30	23 43 18·94	—2·55	3 8 21·8	—32·4	·471865	1187	17 7·4	—19·7
July 5	23 43 16·39		S. 3 8 54·2		1·470678		16 47·7	

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MEAN TIME AT GREENWICH.

Month and Day.	*Apparent* Right Ascension. *Noon.*	Δ_1	*Apparent* Declination. *Noon.*	Δ_1	Log. of True Dist. from the Earth. *Noon.*	Δ_1	Meridian Passage.	Δ_1
	h m s	s	° ′ ″	″			h m	m
July 5	23 43 16·39	−5·48	S. 3 8 54·2	−51·1	1·470678	−1159	16 47·7	−19·7
10	23 43 10·91	8·39	3 9 45·3	69·7	·469519	1119	16 28·0	19·8
15	23 43 2·52	11·16	3 10 55·0	87·1	·468400	1073	16 8·2	19·9
20	23 42 51·36	13·84	3 12 22·1	103·8	·467327	1017	15 48·3	19·9
25	23 42 37·52	16·38	3 14 5·9	119·6	·466310	955	15 28·4	19·9
30	23 42 21·14	18·80	3 16 5·5	134·5	·465355	885	15 8·5	20·0
Aug. 4	23 42 2·34	21·02	3 18 20·0	148·0	·464470	807	14 48·5	20·0
9	23 41 41·32	23·08	3 20 48·0	160·4	·463663	721	14 28·5	20·0
14	23 41 18·24	24·89	3 23 28·4	171·1	·462942	630	14 8·5	20·1
19	23 40 53·35	26·46	3 26 19·5	180·2	·462312	534	13 48·4	20·1
24	23 40 26·89	27·80	3 29 19·7	187·6	·461778	433	13 28·3	20·1
29	23 39 59·09	28·91	3 32 27·3	193·6	·461345	328	13 8·2	20·1
Sept. 3	23 39 30·18	29·71	3 35 40·9	197·5	·461017	220	12 48·1	20·2
8	23 39 0·47	30·24	3 38 58·4	199·4	·460797	−108	12 27·9	20·2
13	23 38 30·23	30·46	3 42 17·8	199·6	·460689	+3	12 7·7	20·2
18	23 37 59·77	30·39	3 45 37·4	197·8	·460692	117	11 47·5	20·2
23	23 37 29·38	30·02	3 48 55·2	194·2	·460809	227	11 27·3	20·1
28	23 36 59·36	29·38	3 52 9·4	188·7	·461036	339	11 7·2	20·1
Oct. 3	23 36 29·98	28·44	3 55 18·1	181·3	·461375	446	10 47·1	20·1
8	23 36 1·54	27·18	3 58 19·4	171·8	·461821	551	10 27·0	20·1
13	23 35 34·36	25·67	4 1 11·2	160·9	·462372	651	10 6·9	20·1
18	23 35 8·69	23·88	4 3 52·1	148·3	·463023	746	9 46·8	20·1
23	23 34 44·81	21·88	4 6 20·4	134·3	·463769	834	9 26·7	20·0
28	23 34 22·93	19·63	4 8 34·7	118·9	·464603	916	9 6·7	20·0
Nov. 2	23 34 3·30	17·20	4 10 33·6	102·3	·465519	991	8 46·7	19·9
7	23 33 46·10	14·53	4 12 15·9	84·3	·466510	1057	8 26·8	19·9
12	23 33 31·57	11·74	4 13 40·2	65·7	·467567	1115	8 6·9	19·9
17	23 33 19·83	8·79	4 14 45·9	46·2	·468682	1162	7 47·0	19·8
22	23 33 11·04	5·78	4 15 32·1	26·4	·469844	1201	7 27·2	19·7
27	23 33 5·26	−2·64	4 15 58·5	−5·9	·471045	1232	7 7·5	19·7
Dec. 2	23 33 2·62	+0·51	4 16 4·4	+14·6	·472277	1250	6 47·8	19·7
7	23 33 3·13	3·76	4 15 49·8	35·6	·473527	1261	6 28·1	19·6
12	23 33 6·89	6·94	4 15 14·2	56·2	·474788	1261	6 8·5	19·5
17	23 33 13·83	10·13	4 14 18·0	76·5	·476049	1250	5 49·0	19·5
22	23 33 23·96	13·23	4 13 1·5	96·3	·477299	1232	5 29·5	19·4
27	23 33 37·19	16·31	4 11 25·2	115·9	·478531	1204	5 10·1	19·4
32	23 33 53·50	+19·26	S. 4 9 29·3	+134·4	·479735	+1167	4 50·7	−19·4
37	23 34 12·76		S. 4 7 14·9		1·480902		4 31·3	

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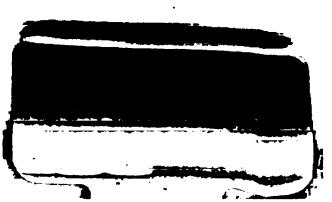

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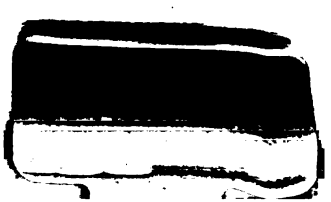

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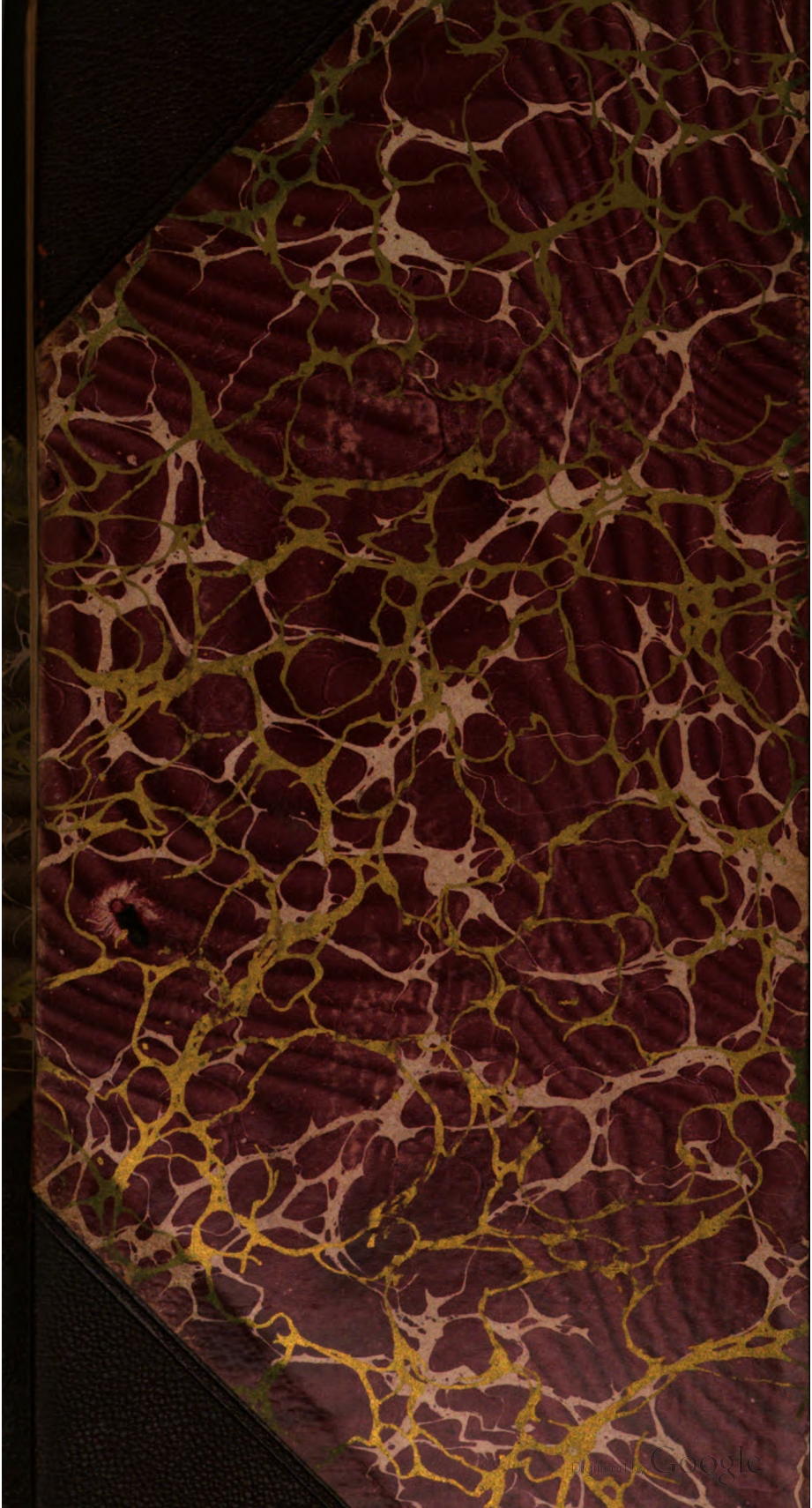
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